Operational Commands

Note For a list of Cisco IOS XE SD-WAN commands qualified for use in Cisco vManage CLI templates, see List of Commands Qualified in Cisco IOS XE Release 17.x. For information about specific commands, see the appropriate chapter in Cisco IOS XE SD-WAN Qualified Command Reference Guide.

Overview of Operational Commands

The operational command reference pages describe the CLI commands that you use to display the properties and operational status of vSmart controllers, vEdge routers, and vBond orchestrators in the overlay network. When you log in to the CLI on a Cisco vEdge device, you are in operational mode.

In the CLI, operational commands are organized alphabetically, and many commands are organized into functional hierarchies. The top-level operational commands and command hierarchies are:

- clear—Zero or erase information stored on the device or collected data.

- clock—Set the time.
- commit—Confirm a pending commit operation.
- complete-on-space—Enable the ability to type a space to have the CLI complete unambiguous commands.
- config—Enter configuration mode.
- exit—Configure basic system parameters.
- file—Configure the properties of a VPN, including the interfaces that participate in the VPN and the routing protocols that are enabled in the VPN.
- help—Display help information about CLI commands.
- history—Control the CLI command history cache.
- idle-timeout—Set how long a CLI session can be idle before the user is logged out.
- logout—Exit from the CLI session.
- no—Negate or cancel a command.
- nslookup—Perform a DNS name lookup.
- paginate—Set the number of lines of command output to display.
- ping—Ping a network device.
- poweroff—Power down the device.
- prompt1—Set the operational mode prompt.
- prompt2—Set the configuration mode prompt.
- pwd—Display the current path mode.
- quit—Exit from the CLI session.
- reboot—Reboot the device.
- request—Install various files onto the device.
- screen-length—Set the CLI screen length.
- screen-width—Set the CLI screen width.
- show—Display information about the status of the device or information stored on the device.
- tcpdump—Perform a TCP dump operation.
- timestamp—Enable timestamping.
- traceroute—Perform a traceroute operation.
- vshell—Exit to the shell on the device.

To filter operational command output, use the filters described in Command Filters for CLI Operational Commands.

clear app cflowd flow-all

Clear the cflowd flows in all VPNs (on vEdge routers only).

clear app cflowd flow-all

Command History

Release	Modification
14.3	Command introduced.

Examples

```
vEdge# show cflowd flows
                                                                    TCP

                                        SRC    DEST          IP     CNTRL  ICMP             EGRESS
      INGRESS     TOTAL  TOTAL  MIN  MAX  START   TIME TO
VPN   SRC IP      DEST IP        PORT   PORT   DSCP  PROTO  BITS   OPCODE  NHOP IP  INTF
      INTF        PKTS   BYTES  LEN  LEN  TIME    EXPIRE
-------------------------------------------------------------------------------------------------
1    10.20.24.15  172.16.255.15  49142  13322  0     6      2      0       0.0.0.0  4294967295
  4294967295  1      78     78   78          3745446565
1    10.20.24.15  172.16.255.15  49143  13322  0     6      2      0       0.0.0.0  4294967295
  4294967295  1      78     78   78          4
1    10.20.24.15  172.16.255.15  49144  13322  0     6      2      0       0.0.0.0  4294967295
  4294967295  1      78     78   78          9
1    10.20.24.15  172.16.255.15  49145  13322  0     6      2      0       0.0.0.0  4294967295
  4294967295  1      78     78   78          14
1    10.20.24.15  172.16.255.15  49146  13322  0     6      2      0       0.0.0.0  4294967295
  4294967295  1      78     78   78          19
1    10.20.24.15  172.16.255.15  49147  13322  0     6      2      0       0.0.0.0  4294967295
  4294967295  1      78     78   78          24
1    10.20.24.15  172.16.255.15  49148  13322  0     6      2      0       0.0.0.0  4294967295
  4294967295  1      78     78   78          29
1    10.20.24.15  172.16.255.15  49149  13322  0     6      2      0       0.0.0.0  4294967295
  4294967295  1      78     78   78          34
1    10.20.24.15  172.16.255.15  49150  13322  0     6      2      0       0.0.0.0  4294967295
  4294967295  1      78     78   78          39
1    10.20.24.15  172.16.255.15  49151  13322  0     6      2      0       0.0.0.0  4294967295
  4294967295  1      78     78   78          44
1    10.20.24.15  172.16.255.15  49152  13322  0     6      2      0       0.0.0.0  4294967295
  4294967295  1      78     78   78          49
1    10.20.24.15  172.16.255.15  49153  13322  0     6      2      0       0.0.0.0  4294967295
  4294967295  1      78     78   78          54
1    10.20.24.15  172.16.255.15  49154  13322  0     6      2      0       0.0.0.0  4294967295
  4294967295  1      78     78   78          59

vEdge# clear app cflowd flow-all
vEdge# show app cflow flows
%  No entries found.
vEdge#
```

Related Topics

cflowd-template

clear app cflowd flows, on page 12

show app cflowd flows, on page 164

clear app cflowd flows

Clear the cflowd flows in a specific VPN (on vEdge routers only).

clear app cflowd flows vpn *vpn-id* [*flow-property*]

Syntax Description

flow-property	Specific Flow To Clear: Narrow down the exact flow to clear. *flow-property* can be one of: **dest-ip** *prefix/length* **dest-port** *port-number*(0 through 65535) **dscp** *dscp-value*(0 through 255) **ip-proto** *protocol-number*(0 through 255) **src-ip** *prefix/length* **src-port** *port-number*(0 through 65535)
vpn *vpn-id*	VPN: Specify the VPN in which to clear all cflowd flows.

Command History

Release	Modification
14.3	Command introduced.

Examples

```
vEdge# show cflowd flows
                                                                    TCP

                                      SRC    DEST         IP     CNTRL  ICMP             EGRESS
      INGRESS     TOTAL  TOTAL  MIN  MAX  START   TIME TO
VPN   SRC IP       DEST IP        PORT   PORT   DSCP  PROTO  BITS   OPCODE  NHOP IP  INTF
      INTF        PKTS   BYTES  LEN  LEN  TIME    EXPIRE
------------------------------------------------------------------------------------------------
1    10.20.24.15  172.16.255.15  49142  13322  0     6      2      0       0.0.0.0  4294967295
  4294967295  1      78     78   78          3745446565
1    10.20.24.15  172.16.255.15  49143  13322  0     6      2      0       0.0.0.0  4294967295
  4294967295  1      78     78   78          4
1    10.20.24.15  172.16.255.15  49144  13322  0     6      2      0       0.0.0.0  4294967295
  4294967295  1      78     78   78          9
1    10.20.24.15  172.16.255.15  49145  13322  0     6      2      0       0.0.0.0  4294967295
  4294967295  1      78     78   78          14
1    10.20.24.15  172.16.255.15  49146  13322  0     6      2      0       0.0.0.0  4294967295
  4294967295  1      78     78   78          19
```

```
1    10.20.24.15  172.16.255.15  49147  13322  0     6      2      0       0.0.0.0  4294967295
  4294967295  1      78     78   78           24
1    10.20.24.15  172.16.255.15  49148  13322  0     6      2      0       0.0.0.0  4294967295
  4294967295  1      78     78   78           29
1    10.20.24.15  172.16.255.15  49149  13322  0     6      2      0       0.0.0.0  4294967295
  4294967295  1      78     78   78           34
1    10.20.24.15  172.16.255.15  49150  13322  0     6      2      0       0.0.0.0  4294967295
  4294967295  1      78     78   78           39
1    10.20.24.15  172.16.255.15  49151  13322  0     6      2      0       0.0.0.0  4294967295
  4294967295  1      78     78   78           44
1    10.20.24.15  172.16.255.15  49152  13322  0     6      2      0       0.0.0.0  4294967295
  4294967295  1      78     78   78           49
1    10.20.24.15  172.16.255.15  49153  13322  0     6      2      0       0.0.0.0  4294967295
  4294967295  1      78     78   78           54
1    10.20.24.15  172.16.255.15  49154  13322  0     6      2      0       0.0.0.0  4294967295
  4294967295  1      78     78   78           59

vEdge# clear app cflowd flows vpn 1
vEdge# show app cflow flows
%  No entries found.
vEdge#
```

Related Topics

cflowd-template
clear app cflowd flow-all, on page 11
show app cflowd flows, on page 164

clear app cflowd statistics

Zero cflowd packet statistics (on vEdge routers only).

clear app cflowd statistics

Command History

Release	Modification
14.3	Command introduced.

Examples

```
vEdge# show app cflowd statistics
      data_pkts                :      539
      template_pkts            :      15
      total-pkts               :      0
      flow-refresh             :      269
      flow-ageout              :      270
vEdge# clear app cflowd statistics
vEdge# show app cflowd statistics
      data_pkts                :      2
      template_pkts            :      0
      total-pkts               :      0
      flow-refresh             :      1
      flow-ageout              :      1
```

Related Topics

cflowd-template
show app cflowd statistics, on page 166

clear app dpi all

Clear all DPI flows on the vEdge router (on vEdge routers only).

clear app dpi all

Command History

Release	Modification
15.2	Command introduced.

Examples

```
vEdge# show app dpi flows

                                    Source  Dest

VPN  SRC IP         DST IP          Port    Port   Protocol  APPLICATION  FAMILY
  ACTIVE SINCE
-------------------------------------------------------------------------------------------------------
1    10.192.42.2    74.125.20.95    20581   443    udp       unknown      Standard
  2015-05-04T14:07:46+00:00
1    10.192.42.2    74.125.25.188   55742   5228   tcp       gtalk        Instant Messaging
  2015-05-03T21:06:57+00:00
1    10.192.42.2    74.125.28.95    36597   443    tcp       google       Web
  2015-05-04T14:12:43+00:00
1    10.192.42.2    74.125.28.95    36598   443    tcp       google       Web
  2015-05-04T14:12:45+00:00
1    10.192.42.2    192.168.15.3    63665   53     udp       dns          Network Service
  2015-05-04T14:14:40+00:00
1    10.192.42.2    216.58.192.14   40616   443    tcp       https        Web
  2015-05-04T14:12:02+00:00
1    10.192.42.2    216.58.192.36   45889   443    tcp       https        Web
  2015-05-04T14:14:40+00:00
1    10.192.42.2    216.58.192.36   45903   443    tcp       https        Web
  2015-05-04T14:14:40+00:00
1    10.192.42.2    216.115.20.77   10000   10000  udp       sip          Audio/Video
  2015-05-03T08:22:51+00:00
1    192.168.20.83  1.1.42.1        51586   22     tcp       ssh          Encrypted
  2015-05-04T13:28:03+00:00

vEdge# clear app dpi all
vEdge# show app dpi flows
% No entries found.
vEdge#
```

Related Topics

app-visibility
clear app dpi apps, on page 15
clear app dpi flows, on page 16

show app dpi applications, on page 168
show app dpi flows, on page 169
show app dpi supported-applications, on page 172

clear app dpi apps

Clear specific applications in a particular VPN on the vEdge router (on vEdge routers only).

clear app dpi apps vpn *vpn-id* [**application** *name*] [**source-prefix** *prefix* | *length*]

Syntax Description

application *name*	Application Name: Name of the application to clear.
source-prefix *prefix*|*length*	Source IP address: Source IP prefix for the application or applications to clear.
vpn *vpn-id*	VPN: VPN in which the application participates.

Command History

Release	Modification
15.2	Command introduced.

Examples

```
vEdge# show app dpi applications

VPN  SRC IP       APPLICATION         FAMILY
-----------------------------------------------------------
1    2.51.88.142  bittorrent          Peer to Peer
1    10.192.42.1  syslog              Application Service
1    10.192.42.1  tcp                 Network Service
1    10.192.42.1  unknown             Standard
1    10.192.42.2  addthis             Web
1    10.192.42.2  adobe               Web
1    10.192.42.2  adobe_update        Web
1    10.192.42.2  akamai              Web
1    10.192.42.2  alexa               Web
1    10.192.42.2  alibaba             Web
1    10.192.42.2  aliexpress          Web
1    10.192.42.2  amazon              Web
1    10.192.42.2  amazon_adsystem     Web
1    10.192.42.2  amazon_aws          Web
1    10.192.42.2  amazon_cloud_drive  Web
1    10.192.42.2  aol                 Web
1    10.192.42.2  apple               Web
...
```

```
vEdge# clear app dpi apps vpn 1 application aol
vEdge# show app dpi applications

VPN  SRC IP       APPLICATION         FAMILY
-------------------------------------------------------------
1    2.51.88.142  bittorrent          Peer to Peer
1    10.192.42.1  syslog              Application Service
1    10.192.42.1  tcp                 Network Service
1    10.192.42.1  unknown             Standard
1    10.192.42.2  addthis             Web
1    10.192.42.2  adobe               Web
1    10.192.42.2  adobe_update        Web
1    10.192.42.2  akamai              Web
1    10.192.42.2  alexa               Web
1    10.192.42.2  alibaba             Web
1    10.192.42.2  aliexpress          Web
1    10.192.42.2  amazon              Web
1    10.192.42.2  amazon_adsystem     Web
1    10.192.42.2  amazon_aws          Web
1    10.192.42.2  amazon_cloud_drive  Web
1    10.192.42.2  apple               Web
...
```

Related Topics

app-visibility
clear app dpi all, on page 14
clear app dpi flows, on page 16
show app dpi applications, on page 168
show app dpi flows, on page 169
show app dpi supported-applications, on page 172

clear app dpi flows

Clear specific DPI flows in a particular VPN on the vEdge router (on vEdge routers only).

clear app dpi flows vpn *vpn-id* [**destination-prefix** *prefix/length*] [**destination-port** *number*] [**ip-protocol** *protocol*] [**source-prefix** *prefix/length*] [**src-port** *number*]

Syntax Description

destination-prefix *prefix/length* **source-prefix** *prefix/length*	IP Prefix: Destination or source IP prefix of the flow.
destination-port *number* **source-port** *number*	Port Number: Destination or source port number of the flow.
ip-protocol *protocol*	Protocol: Destination or source port number of the flow.
vpn *vpn-id*	VPN: VPN in which the flow participates.

Command History

Release	Modification
15.2	Command introduced.

Examples

```
vEdge# show app dpi flows

                                    Source  Dest

VPN  SRC IP         DST IP         Port    Port   PROTOCOL  APPLICATION  FAMILY
  ACTIVE SINCE
-------------------------------------------------------------------------------------------------------
1    10.192.42.2    74.125.20.95   20581   443    udp       unknown      Standard
  2015-05-04T14:07:46+00:00
1    10.192.42.2    74.125.25.188  55742   5228   tcp       gtalk        Instant Messaging
  2015-05-03T21:06:57+00:00
1    10.192.42.2    74.125.28.95   36597   443    tcp       google       Web
  2015-05-04T14:12:43+00:00
1    10.192.42.2    74.125.28.95   36598   443    tcp       google       Web
  2015-05-04T14:12:45+00:00
1    10.192.42.2    192.168.15.3   63665   53     udp       dns          Network Service
  2015-05-04T14:14:40+00:00
1    10.192.42.2    216.58.192.14  40616   443    tcp       https        Web
  2015-05-04T14:12:02+00:00
1    10.192.42.2    216.58.192.36  45889   443    tcp       https        Web
  2015-05-04T14:14:40+00:00
1    10.192.42.2    216.58.192.36  45903   443    tcp       https        Web
  2015-05-04T14:14:40+00:00
1    10.192.42.2    216.115.20.77  10000   10000  udp       sip          Audio/Video
  2015-05-03T08:22:51+00:00
1    192.168.20.83  1.1.42.1       51586   22     tcp       ssh          Encrypted
  2015-05-04T13:28:03+00:00

vEdge# clear app dpi flows vpn 1
vEdge# show app dpi flows
% No entries found.
vEdge#
```

Related Topics

app-visibility
clear app dpi all, on page 14
clear app dpi apps, on page 15
show app dpi applications, on page 168
show app dpi flows, on page 169
show app dpi supported-applications, on page 172

clear app log flow-all

Clear all logged flows(on vEdge routers only).

clear app log flow-all

Command History

Release	Modification
16.3	Command introduced.

Examples

```
vEdge# show app log flow-count

VPN  COUNT
------------
0    7

vEdge# clear app log flow-all
vEdge# show app log flow-count
% No entries found.
vEdge#
```

Related Topics

clear app log flows, on page 18
log-frequency
clear app log flow-all, on page 17
show app log flows, on page 178
show system statistics, on page 454

clear app log flows

Clear the information logged about flows (on vEdge routers only). After you issue this command, collection of information about the flow resumes immediately.

clear app log flows [**dest-ip** *prefix*] [**dest-port** *number*] [**ip-proto** *number*] [**src-ip** *prefix*] [**src-port** *number*] **vpn** *vpn-id*

Syntax Description

none	Clear information logged about all flows on the router.
dest-ip *prefix*	Destination IP Prefix: Clear information logged about flows with the specified destination IP prefix.
dest-port *number*	Destination Port Number: Clear information logged about flows with the specified destination port number.
ip-protocol *number*	IP Protocol: Clear information logged about flows with the specified IP protocol number.
src-ip *prefix*	Source IP Prefix: Clear information logged about flows with the specified source IP prefix.

src-port *number*	Source Port Number: Clear information logged about flows with the specified source port number.
vpn *vpn-id*	Specific VPN: Clear the logged flows in the specified VPN.

Command History

Release	Modification
16.3	Command introduced.

Examples

```
vEdge# show app log flows | tab

                                                                  TCP
                                    TIME    EGRESS  INGRESS
                                SRC    DEST         IP     CNTRL  ICMP                TOTAL
TOTAL                               TO      INTF    INTF     POLICY     POLICY  POLICY
VPN  SRC IP      DEST IP     PORT   PORT   DSCP  PROTO  BITS   OPCODE  NHOP IP     PKTS
BYTES  START TIME               EXPIRE  NAME    NAME     NAME       ACTION  DIRECTION
-------------------------------------------------------------------------------------------------------------------------------
0    10.0.5.11   10.1.15.15  12366  12346  48    17     0      0       10.1.15.15  102
28942  Thu Dec  8 11:42:38 2016  59      cpu     ge0/0    BlackBird  accept  inbound-acl
0    10.0.5.11   10.1.15.15  12366  12366  48    17     0      0       10.1.15.15  10
1910   Thu Dec  8 11:42:28 2016  14      cpu     ge0/0    BlackBird  accept  inbound-acl
0    10.0.5.19   10.1.15.15  12446  12346  48    17     0      0       10.1.15.15  73
17458  Thu Dec  8 11:42:34 2016  59      cpu     ge0/0    BlackBird  accept  inbound-acl
0    10.0.5.21   10.1.15.15  12366  12346  48    17     0      0       10.1.15.15  102
28942  Thu Dec  8 11:42:38 2016  59      cpu     ge0/0    BlackBird  accept  inbound-acl
0    10.0.5.21   10.1.15.15  12366  12366  48    17     0      0       10.1.15.15  11
2101   Thu Dec  8 11:42:28 2016  15      cpu     ge0/0    BlackBird  accept  inbound-acl
0    10.0.12.20  10.1.15.15  12446  12346  48    17     0      0       10.1.15.15  76
17887  Thu Dec  8 11:42:34 2016  59      cpu     ge0/0    BlackBird  accept  inbound-acl
0    10.0.12.26  10.1.15.15  0      0      0     1      0      0       10.1.15.15  17
1666   Thu Dec  8 11:42:33 2016  59      cpu     ge0/0    BlackBird  accept  inbound-acl
0    10.0.12.26  10.1.15.15  12346  12346  48    17     0      0       10.1.15.15  28
7167   Thu Dec  8 11:42:33 2016  28      cpu     ge0/0    BlackBird  accept  inbound-acl
0    10.1.14.14  10.1.15.15  12366  12346  48    17     0      0       10.1.15.15  106
32230  Thu Dec  8 11:42:38 2016  59      cpu     ge0/0    BlackBird  accept  inbound-acl
0    10.1.14.14  10.1.15.15  12366  12366  48    17     0      0       10.1.15.15  11
2101   Thu Dec  8 11:42:28 2016  15      cpu     ge0/0    BlackBird  accept  inbound-acl
0    10.1.16.16  10.1.15.15  12366  12346  48    17     0      0       10.1.15.15  102
28942  Thu Dec  8 11:42:38 2016  59      cpu     ge0/0    BlackBird  accept  inbound-acl
0    10.1.16.16  10.1.15.15  12366  12366  48    17     0      0       10.1.15.15  11
2101   Thu Dec  8 11:42:28 2016  15      cpu     ge0/0    BlackBird  accept  inbound-acl

vEdge# clear app log flows
Value for 'vpn' (<0..65530>): 0
vEdge# show app log flows | tab

                                                                  TCP
                                    TIME    EGRESS  INGRESS
                                SRC    DEST         IP     CNTRL  ICMP                TOTAL
TOTAL                               TO      INTF    INTF     POLICY     POLICY  POLICY
VPN  SRC IP      DEST IP     PORT   PORT   DSCP  PROTO  BITS   OPCODE  NHOP IP     PKTS
BYTES  START TIME               EXPIRE  NAME    NAME     NAME       ACTION  DIRECTION
```

```
-------------------------------------------------------------------------------------------------------------------------------
0    10.0.5.11   10.1.15.15  12366  12346  48    17     0      0       10.1.15.15  3
573    Thu Dec  8 11:43:33 2016  59      cpu     ge0/0    BlackBird  accept  inbound-acl
0    10.0.5.21   10.1.15.15  12366  12346  48    17     0      0       10.1.15.15  3
573    Thu Dec  8 11:43:33 2016  59      cpu     ge0/0    BlackBird  accept  inbound-acl
0    10.1.14.14  10.1.15.15  12366  12346  48    17     0      0       10.1.15.15  3
573    Thu Dec  8 11:43:33 2016  59      cpu     ge0/0    BlackBird  accept  inbound-acl
0    10.1.16.16  10.1.15.15  12366  12346  48    17     0      0       10.1.15.15  3
573    Thu Dec  8 11:43:33 2016  59      cpu     ge0/0    BlackBird  accept  inbound-acl
```

Related Topics

clear app log flow-all, on page 17
log-frequency
show app log flow-count, on page 177
show app log flows, on page 178
show system statistics, on page 454

clear arp

Refresh dynamically created IPv4 entries in the Address Resolution Protocol (ARP) cache (on vEdge routers and vSmart controllers only).

To clear IPv6 entries in the ARP cache, use the **clear ipv6 neighbor** command.

clear arp [**interface** *interface-name*] [*ip-address*] [**vpn** *vpn-id*]

Syntax Description

none	Refresh all dynamic ARP cache entries.
interface *interface-name*	Interface: Refresh the dynamic ARP cache entries associated with the specific interface.
ip-address	IP Address: Refresh the dynamic ARP cache entries for the specified IP address.
vpn *vpn-id*	VPN: Refresh the dynamic ARP cache entries for the specific VPN.

Command History

Release	Modification
14.1	Command introduced.

Examples

```
vEdge# show arp
     IF
VPN  NAME    IP           MAC                STATE    IDLE TIMER  UPTIME
```

```
-------------------------------------------------------------------------------
0    ge0/0  10.0.11.1    00:0c:29:86:ea:83  static   0:00:00:00  0:13:02:02
0    ge0/7  10.0.100.11  00:0c:29:86:ea:c9  static   0:00:00:00  0:13:03:58
512  eth0   10.0.1.1     00:50:56:c0:00:01  dynamic  0:00:13:34  0:00:15:25
512  eth0   10.0.1.11    00:50:56:00:01:01  static   0:00:00:00  0:13:04:22
512  eth0   10.0.1.254   00:50:56:fe:2a:d4  dynamic  0:00:19:34  0:00:03:25

vEdge# clear arp entries
vEdge# show arp
     IF
VPN  NAME   IP           MAC                STATE   IDLE TIMER  UPTIME
-------------------------------------------------------------------------------
0    ge0/0  10.0.11.1    00:0c:29:86:ea:83  static  0:00:00:00  0:13:02:08
0    ge0/7  10.0.100.11  00:0c:29:86:ea:c9  static  0:00:00:00  0:13:04:04
512  eth0   10.0.1.11    00:50:56:00:01:01  static  0:00:00:00  0:13:04:29
```

Related Topics

clear ipv6 neighbor, on page 43
show arp, on page 185
show ipv6 neighbor, on page 320

clear bfd transitions

Clear the counters for BFD transitions (on vEdge routers only).

clear bfd transitions

Command History

Release	Modification
15.1.1	Command introduced.

Examples

```
vEdge# show bfd sessions system-ip 1.1.1.1
                                       SOURCE TLOC      REMOTE TLOC
DST PUBLIC       DST PUBLIC          DETECT      TX
SYSTEM IP        SITE ID  STATE       COLOR            COLOR            SOURCE IP
IP               PORT        ENCAP  MULTIPLIER  INTERVAL(msec)  UPTIME         TRANSITIONS

-------------------------------------------------------------------------------------------------------------------
1.1.1.1          1        up          default          public-internet  192.168.1.104
69.181.135.19    34601       ipsec  3           1000            3:17:22:43      5

vEdge# clear bfd transitions
vEdge# show bfd sessions system-ip 1.1.1.1
                                       SOURCE TLOC      REMOTE TLOC
DST PUBLIC       DST PUBLIC          DETECT      TX
SYSTEM IP        SITE ID  STATE       COLOR            COLOR            SOURCE IP
IP               PORT        ENCAP  MULTIPLIER  INTERVAL(msec)  UPTIME         TRANSITIONS

-------------------------------------------------------------------------------------------------------------------
1.1.1.1          1        up          default          public-internet  192.168.1.104
69.181.135.19    34601       ipsec  3           1000            3:17:22:43      0
```

Related Topics

bfd color
show bfd history, on page 186
show bfd sessions, on page 187

clear bgp all

Reset BGP peering sessions with all neighbors in a specific VPN (on vEdge routers only).

clear bgp all vpn *vpn-id*

Command History

Release	Modification
14.1	Command introduced.

Examples

```
vEdge# show bgp neighbor vpn 1
                        MSG   MSG   OUT
VPN  PEER ADDR    AS  RCVD  SENT  Q    UPTIME      STATE        AFI
-------------------------------------------------------------------------------
1    10.20.25.16  1   4884  4892  0    0:00:18:31  established  ipv4-unicast

vEdge# clear bgp all vpn 1
vEdge# show bgp neighbor vpn 1
                        MSG   MSG   OUT
VPN  PEER ADDR    AS  RCVD  SENT  Q    UPTIME  STATE  AFI
-------------------------------------------------------------------
1    10.20.25.16  1   4895  4904  0    -       idle   ipv4-unicast
```

Related Topics

clear bgp neighbor, on page 22
show bgp neighbor, on page 192

clear bgp neighbor

Reset the peering sessions with a specific BGP neighbor in a VPN (on vEdge routers only).

clear bgp neighbor *ip-address* **vpn** *vpn-id* [**soft** (**in** | **out**)]

Syntax Description

*ip-address***vpn** *vpn-id*	Neighbor Address and VPN: Reset the connection to the specific BGP neighbor in the specified VPN.

soft (in | out)	Soft Reset: Perform a reset when the routing policy changes so that the new policy can take effect. With a soft reset, the route table is reconfigured and reactivated, but the BGP session itself is not reset. Use the **in** option to generate inbound route table updates from the BGP neighbor, and use the **out** option to have the local router send a new set of updated to the BGP neighbor.

Command History

Release	Modification
14.1	Command introduced.

Examples

```
vEdge# clear bgp neighbor 10.20.25.16 vpn 1
vEdge# show bgp neighbor

                       MSG   MSG   OUT
VPN  PEER ADDR    AS   RCVD  SENT  Q    UPTIME  STATE  AFI
-------------------------------------------------------------------
1    10.20.25.16  1    8102  8122  0    -       idle   ipv4-unicast

vEdge# show bgp neighbor
                       MSG   MSG   OUT
VPN  PEER ADDR    AS   RCVD  SENT  Q    UPTIME      STATE        AFI
-------------------------------------------------------------------------------
1    10.20.25.16  1    7971  7988  0    0:00:48:56  established  ipv4-unicast

vEdge# clear bgp neighbor 10.20.25.16 vpn 1 soft out
vEdge# show bgp neighbor
VPN  PEER ADDR    AS   RCVD  SENT  Q    UPTIME      STATE        AFI
-------------------------------------------------------------------------------
1    10.20.25.16  1    7986  8004  0    0:00:49:12  established  ipv4-unicast
```

Related Topics

clear bgp all, on page 22
show bgp neighbor, on page 192

clear bridge mac

Clear the MAC addresses that this vEdge router has learned (on vEdge routers only). The router restarts its MAC address learning process, performing flooding until all the MAC addresses are relearned.

clear bridge mac

Command History

Release	Modification
15.3	Command introduced.

Examples

```
vEdge# show bridge mac

                                                    RX     RX       TX     TX
BRIDGE  INTERFACE  MAC ADDR           STATE     PKTS   OCTETS   PKTS   OCTETS
-------------------------------------------------------------------------------
1       ge0/5      aa:01:05:05:00:01  dynamic   2      248      0      0
1       ge0/5      aa:01:05:05:00:02  dynamic   2      248      0      0
1       ge0/5      aa:01:05:05:00:03  dynamic   2      248      0      0
1       ge0/5      aa:01:05:05:00:04  dynamic   2      248      0      0
1       ge0/5      aa:01:05:05:00:05  dynamic   2      248      0      0
2       ge0/5      aa:02:05:05:00:01  dynamic   2      248      0      0
2       ge0/5      aa:02:05:05:00:02  dynamic   2      248      0      0
2       ge0/5      aa:02:05:05:00:03  dynamic   2      248      0      0
2       ge0/5      aa:02:05:05:00:04  dynamic   1      124      0      0
2       ge0/5      aa:02:05:05:00:05  dynamic   1      124      0      0

vEdge# clear bridge mac
vEdge# show bridge mac
% No entries
vEdge#
```

Related Topics

bridge
show bridge mac, on page 200

clear bridge statistics

Clear the bridging statistics (on vEdge routers only).

clear bridge statistics

Command History

Release	Modification
15.3	Command introduced.

Related Topics

bridge
clear bridge mac, on page 23
show bridge interface, on page 199
show bridge mac, on page 200
show bridge table, on page 201

clear cellular errors

Clear errors associated with cellular interfaces (on vEdge routers only).

clear cellular errors

Command History

Release	Modification
16.1	Command introduced.

Examples

```
vEdge# show cellular status
           MODEM    SIM      SIGNAL     NETWORK
INTERFACE  STATUS   STATUS   STRENGTH   STATUS     LAST SEEN ERROR
-------------------------------------------------------------------------
cellular0  Online   Ready    Excellent  Registered  Device has no service

vEdge# clear cellular errors
vEdge# show cellular status
           MODEM    SIM      SIGNAL     NETWORK
INTERFACE  STATUS   STATUS   STRENGTH   STATUS     LAST SEEN ERROR
-------------------------------------------------------------------------
cellular0  Online   Ready    Excellent  Registered None
```

Related Topics

cellular
clear cellular session statistics, on page 25
profile
show cellular modem, on page 202
show cellular network, on page 203
show cellular profiles, on page 205
show cellular radio, on page 206
show cellular sessions, on page 207
show cellular status, on page 208
show interface, on page 265

clear cellular session statistics

Clear the statistics for cellular sessions (on vEdge routers only).

clear cellular session statistics

Command History

Release	Modification
16.1	Command introduced.

Examples

```
vEdge# clear cellular session statistics
vEdge# show cellular session statistics
           SESSION  DATA    DORMANCY  ACTIVE   RX       RX     RX      RX         TX
 TX     TX      TX         RX       TX                  IPV4                IPV4 DNS
```

```
INTERFACE  ID       BEARER  STATE     PROFILE  PACKETS  DROPS  ERRORS  OVERFLOWS  PACKETS
 DROPS  ERRORS  OVERFLOWS  OCTETS    OCTETS    IPV4 ADDR  MASK   IPV4 GW      PRI
IPV4 DNS SEC
-------------------------------------------------------------------------------------------
cellular0  0        LTE     Active    1        0         0      0       0          0
 0      0       0          0         0        10.12.15.6  30    10.12.15.5   10.12.15.1
255.255.255.255
```

Related Topics

clear cellular errors, on page 24
show cellular modem, on page 202
show cellular network, on page 203
show cellular profiles, on page 205
show cellular radio, on page 206
show cellular sessions, on page 207
show cellular status, on page 208
show interface, on page 265

clear cloudexpress computations

Clear the computations performed by Cloud OnRamp for SaaS (formerly called CloudExpress service) (on vEdge routers only). Cloud OnRamp for SaaS computations include application loss, latency, and best interface.

clear cloudexpress computations [**application** *application*]

Syntax Description

(none)	Clear all computations for all applications in all VPNs configured with Cloud OnRamp for SaaS.
application	Specific Application: Clear computations for a specific application configured for Cloud OnRamp for SaaS. Values: amazon_aws, box_net, concur, dropbox, google_apps, gotomeeting, intuit, jira, office365, oracle, salesforce, sap, sugar_crm, webex, zendesk, zoho_crm

Command History

Release	Modification
16.3	Command introduced.
17.1	Removed **vpn** command option.

Examples

Clear the Cloud OnRamp for SaaS computations

```
vEdge# show cloudexpress applications
                                      GATEWAY
                                EXIT  SYSTEM
VPN  APPLICATION                TYPE  IP       INTERFACE  LATENCY  LOSS
```

```
-------------------------------------------------------------------------
100  salesforce               local  -        ge0/2      81       1
100  office365                local  -        ge0/2      61       1
100  amazon_aws               local  -        ge0/2      105      2
100  oracle                   local  -        ge0/0      79       1
100  sap                      local  -        ge0/2      61       1
100  box_net                  local  -        ge0/0      18       1
100  dropbox                  local  -        ge0/2      30       1
100  jira                     local  -        ge0/0      83       2
100  intuit                   local  -        ge0/0      35       3
100  concur                   local  -        ge0/2      62       1
100  zoho_crm                 local  -        ge0/0      14       1
100  zendesk                  local  -        ge0/2      6        0
100  gotomeeting              local  -        ge0/0      13       1
100  webex                    local  -        ge0/0      69       2
100  google_apps              local  -        ge0/0      19       0

vEdge# clear cloudexpress computations
vEdge# show cloudexpress applications
                                 GATEWAY
                            EXIT SYSTEM
VPN  APPLICATION            TYPE IP       INTERFACE  LATENCY  LOSS
-------------------------------------------------------------------------
100  salesforce             none -        -          0        0
100  office365              none -        -          0        0
100  amazon_aws             none -        -          0        0
100  oracle                 none -        -          0        0
100  sap                    none -        -          0        0
100  box_net                none -        -          0        0
100  dropbox                none -        -          0        0
100  jira                   none -        -          0        0
100  intuit                 none -        -          0        0
100  concur                 none -        -          0        0
100  zoho_crm               none -        -          0        0
100  zendesk                none -        -          0        0
100  gotomeeting            none -        -          0        0
100  webex                  none -        -          0        0
100  google_apps            none -        -          0        0
```

Related Topics

show cloudexpress local-exits, on page 221

clear cloudinit data

Clear bootstrap information received from cloud-init in order to attach a new cloud-init file. Cloud-init information includes a token, vBond orchestrator IP address, and organization name (on vEdge Cloud routers only).

clear cloudinit data

Command History

Release	Modification
17.1	Command introduced.

clear control connections

Reset the DTLS connections from the local device to all Cisco SD-WAN devices.

clear control connections

Note This command will reset all the Bidirectional Forwarding Detection (BFD) tunnels on the device.

Command History

Release	Modification
14.2	Command introduced.

Examples

```
vSmart# show control connections
                                                                    PEER                    PEER
PEER     PEER     PEER             SITE        DOMAIN     PEER     PRIVATE  PEER           PUBLIC
TYPE     PROTOCOL SYSTEM IP        ID          ID         PRIVATE IP PORT   PUBLIC IP      PORT    REMOTE COLOR     STATE           UPTIME
-------------------------------------------------------------------------------------------------------------------------------------------
vedge    dtls     172.16.255.14    400         1          10.1.14.14 12350  10.1.14.14     12350   lte              up              0:14:01:50
vedge    dtls     172.16.255.15    500         1          10.1.15.15 12346  10.1.15.15     12346   lte              up              0:00:01:58
vedge    dtls     172.16.255.16    600         1          10.1.16.16 12346  10.1.16.16     12346   lte              up              0:14:01:47
vsmart   dtls     172.16.255.20    200         1          10.0.12.20 12346  10.0.12.20     12346   default          up              0:14:01:37
vbond    dtls     -                0           0          10.1.14.14 12346  10.1.14.14     12346   default          up              0:14:01:54
vmanage  dtls     172.16.255.22    200         1          10.0.12.22 12346  10.0.12.22     12346   default          up              0:14:01:43

vSmart# clear control connections
vSmart# show control connections
                                                                    PEER                    PEER
PEER     PEER     PEER             SITE        DOMAIN     PEER     PRIVATE  PEER           PUBLIC
TYPE     PROTOCOL SYSTEM IP        ID          ID         PRIVATE IP PORT   PUBLIC IP      PORT    REMOTE COLOR     STATE           UPTIME
-------------------------------------------------------------------------------------------------------------------------------------------
vsmart   dtls     172.16.255.20    200         1          10.0.12.20 12346  10.0.12.20     12346   default          up              0:00:00:02
vbond    dtls     -                0           0          10.1.14.14 12346  10.1.14.14     12346   default          up              0:00:00:03
vmanage  dtls     172.16.255.22    200         1          10.0.12.22 12346  10.0.12.22     12346   default          up              0:00:00:02

Release Information Edit section
```

Related Topics

clear omp all, on page 44
show control connections, on page 227
show omp peers, on page 348

clear control connections-history

Erase the connection history on the local device.

clear control connections-history

Examples

```
vEdge# show control connections-history

ACSRREJ    - Challenge rejected by peer.              NOVMCFG   - No cfg in vmanage for device.
BDSGVERFL  - Board ID Signature Verify Failure.       NOZTPEN   - No/Bad chassis-number entry in ZTP.
BIDNTPR    - Board ID not Initialized.               ORPTMO    - Server's peer timed out.
BIDNTVRFD  - Peer Board ID Cert not verified.        RMGSPR    - Remove Global saved peer.
CERTEXPRD  - Certificate Expired                     RXTRDWN   - Received Teardown.
CRTREJSER  - Challenge response rejected by peer.    RDSIGFBD  - Read Signature from Board ID failed.
CRTVERFL   - Fail to verify Peer Certificate.        SSLNFAIL  - Failure to create new SSL context.
```

```
CTORGNMMIS - Certificate Org name mismatch.          SERNTPRES - Serial Number not present.
DCONFAIL   - DTLS connection failure.                SYSIPCHNG - System-IP changed.
DEVALC     - Device memory Alloc failures.           TMRALC    - Memory Failure.
DHSTMO     - DTLS HandShake Timeout.                 TUNALC    - Memory Failure.
DISCVBD    - Disconnect vBond after register reply.  TXCHTOBD  - Failed to send challenge to BoardID.
DISTLOC    - TLOC Disabled.                          UNMSGBDRG - Unknown Message type or Bad Register msg.
DUPSER     - Duplicate Serial Number.                UNAUTHEL  - Recd Hello from Unauthenticated peer.
DUPCLHELO  - Recd a Dup Client Hello, Reset Gl Peer. VBDEST    - vDaemon process terminated.
HAFAIL     - SSL Handshake failure.                  VECRTREV  - vEdge Certification revoked.
IP_TOS     - Socket Options failure.                 VSCRTREV  - vSmart Certificate revoked.
LISFD      - Listener Socket FD Error.               VB_TMO    - Peer vBond Timed out.
MGRTBLCKD  - Migration blocked. Wait for local TMO.
MEMALCFL   - Memory Allocation Failure.              VM_TMO    - Peer vManage Timed out.
NOACTVB    - No Active vBond found to connect.       VP_TMO    - Peer vEdge Timed out.
NOERR      - No Error.                               VS_TMO    - Peer vSmart Timed out.
NOSLPRCRT  - Unable to get peer's certificate.       XTVSTRDN  - Extra vSmart tear down.

                                                                 PEER                    PEER

PEER     PEER     PEER            SITE       DOMAIN     PEER           PRIVATE  PEER           PUBLIC
TYPE     PROTOCOL SYSTEM IP       ID         ID         PRIVATE IP     PORT     PUBLIC IP      PORT   LOCAL COLOR  STATE       LOCAL     REMOTE     REPEAT
                                                                                                                                 ERROR     ERROR      COUNT DOWNTIME
-------------------------------------------------------------------------------------------------------------------------------------------------------------------
vbond    dtls     -               0          0          10.1.14.14     12346    10.1.14.14     12346  lte          tear_down   DISCVBD   NOERR      0
2016-02-23T16:33:30-0800
vbond    dtls     -               0          0          10.1.14.14     12346    10.1.14.14     12346  lte          connect     DCONFAIL  NOERR      4
2016-02-23T16:32:51-0800

vEdge# clear control connections-history
vEdge# show control connections-history
vEdge#
```

Command History

Release	Modification
16.1	Command introduced.

Related Topics

clear orchestrator connections-history, on page 48
show control connections, on page 227
show control connections-history, on page 230
show orchestrator connections-history, on page 370

clear control port-index

To reset port-hop back to the base port on Cisco vEdge devices, use the **clear control port-index** command in privileged EXEC mode.

clear control port-index

Syntax Description

This command has no keywords or arguments.

Command Default

This command has no default behavior.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco SD-WAN Release 20.6.1	This command was introduced.

Usage Guidelines

Use the **clear control port-index** command to reach back to 12346 base port on all the WAN interfaces.

Examples

The following example shows how to clear the port-hopping bucket index:

```
Device# clear control port-index
```

clear crash

Delete the core files on the local device. Core files are saved in the /var/crash directory on the local device.

clear crash *number*

Syntax Description

(none)	Clear all core and information files on the device.
number	Specific Core File: Clear the specific core file. *number* is the index number listed in the **show crash** output.

Command History

Release	Modification
15.2	Command introduced.

Examples

```
vSmart# show crash

INDEX  CORE TIME                 CORE FILENAME
-------------------------------------------------------------------
0      Tue Sep  2 17:13:43 2014  core.ompd.866.vsmart.1409703222

vSmart# clear crash
Are you sure you want to clear core and info files? [yes, NO]
vSmart# yes
vSmart# show crash
% No entries found.
```

Related Topics

file list, on page 79
file show, on page 80
show crash, on page 241

clear dhcp server-bindings

Clear the bindings to DHCP servers (on vEdge routers only).

clear dhcp server-bindings vpn *vpn-id* **interface** *interface-name* [**client-mac** *mac-address*]

Syntax Description

interface *interface-name*	Interface to DHCP Server: Interface to use to reach the DHCP server.

client-mac *client-mac*	MAC Address of DHCP Server: Clear the entry for a single DHCP host based on the host's MAC address.
vpn *vpn-id*	VPN: Clear the DHCP bindings in a specific VPN.

Command History

Release	Modification
14.3	Command introduced.
15.1	**client-mac** option added.

Related Topics

clear dhcp state, on page 31
dhcp-helper
dhcp-server
show dhcp interface, on page 244
show dhcp server, on page 245

clear dhcp state

Clear IPv4 DHCP state on the local device (on vEdge routers and vSmart controllers only).

clear dhcp state interface *interface-name* [**vpn** *vpn-id*]

Syntax Description

interface *interface-name*	Clear the DHCP state of a specific interface.
vpn *vpn-id*	Clear the DHCP state of an interface in the specified VPN.

Command History

Release	Modification
14.3	Command introduced.

Examples

```
vEdge# clear dhcp state interface ge0/0
vEdge# show dhcp interface state init
                     ACQUIRED   LEASE  TIME
VPN  IFNAME  STATE   IP         TIME   REMAINING  GATEWAY
-------------------------------------------------------------
0    ge0/0   init    0.0.0.0/0  -      -          0.0.0.0
```

Related Topics

clear ipv6 dhcp state, on page 42

show dhcp interface, on page 244
show dhcp server, on page 245
show ipv6 dhcp interface, on page 315

clear dns cache

Clear the cache of DNS entries on the local device. Use this command to clear stale entries from the DNS cache.

The DNS cache is populated when the device establishes a connection with the vBond orchestrator. For a vEdge router, this connection is transient, and the DNS cache is cleared when its connection to the vBond orchestrator is closed. For a vSmart controller, the connection to a vBond orchestrator is permanent.

clear dns cache

Command History

Release	Modification
15.3	Command introduced.

Examples

In the example output below, the entries in the DNS cache are highlighted in bold. After the DNS cache is cleared, it takes about 30 seconds for the vSmart controller to reestablish its connection with the vBond orchestrator and to repopulate its DNS cache.

```
vSmart# show control local-properties
organization-name            Cisco Inc
certificate-status           Installed
root-ca-chain-status         Installed

certificate-validity         Valid
certificate-not-valid-before Jun 29 18:00:05 2015 GMT
certificate-not-valid-after  Jun 28 18:00:05 2016 GMT

dns-name                     10.1.14.14
site-id                      100
domain-id                    1
protocol                     dtls
tls-port                     23456
system-ip                    172.16.255.19
chassis-num/unique-id        faa123ce-d281-43f1-a3f6-c95925d66869
serial-num                   12345602
register-interval            0:00:00:30
retry-interval               0:00:00:15
no-activity-exp-interval     0:00:00:12
dns-cache-ttl                0:00:30:00
port-hopped                  FALSE
time-since-last-port-hop     0:00:00:00
number-vbond-peers           1

INDEX   IP                PORT

--------------------------------

0       10.1.14.14        12346

number-active-wan-interfaces 1

                 PUBLIC           PUBLIC  PRIVATE          PRIVATE                                                                  ADMIN     OPERATION  LAST
INDEX  INTERFACE IP               PORT    IP               PORT     VSMARTS  VMANAGES  COLOR            CARRIER          STATE     STATE      CONNECTION
-------------------------------------------------------------------------------------------------------------------------------------------------------
0      eth1      10.0.5.19        12346   10.0.5.19        12346    1        1         default          default          up        up         0:00:00:08

vSmart# clear dns cache
vSmart# show control local-properties
organization-name            Cisco Inc
certificate-status           Installed
root-ca-chain-status         Installed

certificate-validity         Valid
```

```
certificate-not-valid-before Jun 29 18:00:05 2015 GMT
certificate-not-valid-after  Jun 28 18:00:05 2016 GMT

dns-name                     10.1.14.14
site-id                      100
domain-id                    1
protocol                     dtls
tls-port                     23456
system-ip                    172.16.255.19
chassis-num/unique-id        faa123ce-d281-43f1-a3f6-c95925d66869
serial-num                   12345602
register-interval            0:00:00:30
retry-interval               0:00:00:15
no-activity-exp-interval     0:00:00:12
dns-cache-ttl                0:00:30:00
port-hopped                  FALSE
time-since-last-port-hop     0:00:00:00
number-vbond-peers           0
number-active-wan-interfaces 1

                 PUBLIC           PUBLIC  PRIVATE          PRIVATE                                                                  ADMIN     OPERATION  LAST
INDEX  INTERFACE IP               PORT    IP               PORT     VSMARTS  VMANAGES  COLOR            CARRIER          STATE     STATE      CONNECTION
-------------------------------------------------------------------------------------------------------------------------------------------------------
0      eth1      10.0.5.19        12346   10.0.5.19        12346    1        1         default          default          up        up         0:00:00:16

vSmart# about 30 seconds elapse
vSmart# show control local-properties
organization-name            Cisco Inc
certificate-status           Installed
root-ca-chain-status         Installed

certificate-validity         Valid
certificate-not-valid-before Jun 29 18:00:05 2015 GMT
certificate-not-valid-after  Jun 28 18:00:05 2016 GMT

dns-name                     10.1.14.14
site-id                      100
domain-id                    1
protocol                     dtls
tls-port                     23456
system-ip                    172.16.255.19
chassis-num/unique-id        faa123ce-d281-43f1-a3f6-c95925d66869
serial-num                   12345602
register-interval            0:00:00:30
retry-interval               0:00:00:15
no-activity-exp-interval     0:00:00:12
dns-cache-ttl                0:00:30:00
port-hopped                  FALSE
time-since-last-port-hop     0:00:00:00
number-vbond-peers           1

INDEX   IP                PORT
-------------------------------
0       10.1.14.14        12346

number-active-wan-interfaces 1

                 PUBLIC           PUBLIC  PRIVATE          PRIVATE                                                                  ADMIN     OPERATION  LAST
INDEX  INTERFACE IP               PORT    IP               PORT     VSMARTS  VMANAGES  COLOR            CARRIER          STATE     STATE      CONNECTION
-------------------------------------------------------------------------------------------------------------------------------------------------------
0      eth1      10.0.5.19        12346   10.0.5.19        12346    1        1         default          default          up        up         0:00:00:03
```

Related Topics

timer

show control local-properties, on page 233

clear dot1x client

Deauthenticate a client connected on an 802.1X or 802.11i interface (on vEdge routers only). Reauthentication occurs automatically if the client attempts to use the interface again.

clear dot1x client *mac-address* **interface** *interface-name*

Syntax Description

mac-address	Client MAC Address: MAC address of the client to deauthenticate. To determine a client's MAC address, use the **show dot1x clients** command.
interface *interface-name*	Interface Name: Interface through which the client is reachable. To determine the interface name, use the **show dot1x interfaces** command.

Command History

Release	Modification
16.3	Command introduced.

Related Topics

show dot1x clients, on page 246
show dot1x interfaces, on page 247
show dot1x radius, on page 248

clear history

Clear the history of the commands issued in operational mode.

clear history

Command History

Release	Modification
14.1	Command introduced.

Examples

```
vEdge# show history
23:20:03 -- show arp
23:20:08 -- clear arp entries
23:20:10 -- show arp
23:22:28 -- clear dhcp
23:22:34 -- clear dhcp state
23:22:43 -- show dhcp
23:22:53 -- clear dhcp inter eth0
23:23:17 -- clear dhcp state interface eth0
23:23:28 -- show dhcp
23:23:50 -- show interface
23:24:13 -- show dhcp
23:26:01 -- history
23:26:09 -- show history
vEdge# clear history
vEdge# show history
23:26:18 -- show history
vEdge#
```

Related Topics

history, on page 81
show history, on page 260

clear igmp interface

Clear the interfaces on which IGMP is enabled on the router (on vEdge routers only).

Syntax Description

interface-name	Interface Name: Name of the interface to clear. *interface-name* has the format **ge***slot*/*port*.
vpn *vpn-id*	VPN: Clear IGMP information in a specific VPN.

Command History

Release	Modification
14.3	Command introduced.

Related Topics

clear igmp protocol, on page 35
clear igmp statistics, on page 35
igmp
show igmp interface, on page 262

clear igmp protocol

Flush all IGMP groups and relearn them (on vEdge routers only).

clear igmp interface vpn *vpn-id*

Syntax Description

vpn *vpn-id*	VPN: Flush all IGMP groups in a specific VPN.

Command History

Release	Modification
14.3	Command introduced.

Related Topics

clear igmp interface, on page 34
clear igmp statistics, on page 35
igmp
show igmp groups, on page 261

clear igmp statistics

Zero IGMP statistics (on vEdge routers only).

clear igmp statistics [**vpn** *vpn-id*]

Syntax Description

(none)	Clear IGMP statistics for all VPNs.
vpn *vpn-id*	VPN: Clear IGMP statistics in a specific VPN.

Command History

Release	Modification
14.3	Command introduced.

Examples

```
vEdge# show igmp statistics

     RX       RX                                                  TX       TX
     GENERAL  GROUP  RX V1   RX V2   RX     RX       RX     GENERAL  GROUP  TX
VPN  QUERY    QUERY  REPORT  REPORT  LEAVE  UNKNOWN  ERROR  QUERY    QUERY  ERROR
-------------------------------------------------------------------------------
1    0        0      0       0       0      0        0      238      0      0

vEdge# clear igmp statistics
vEdge# show igmp statistics

     RX       RX                                                  TX       TX
     GENERAL  GROUP  RX V1   RX V2   RX     RX       RX     GENERAL  GROUP  TX
VPN  QUERY    QUERY  REPORT  REPORT  LEAVE  UNKNOWN  ERROR  QUERY    QUERY  ERROR
-------------------------------------------------------------------------------
1    0        0      0       0       0      0        0      0        0      0
```

Related Topics

clear igmp interface, on page 34
clear igmp protocol, on page 35
igmp
show igmp statistics, on page 263

clear installed-certificates

Clear all the certificates on the local device, including the public and private keys and the root certificate, and return the device to the factory-default state.

clear installed-certificates

Command History

Release	Modification
14.1	Command introduced.

Examples

```
vSmart# show control local-properties
organization-name            Cisco Inc
certificate-status           Installed
root-ca-chain-status         Installed

certificate-validity         Valid
certificate-not-valid-before Apr 07 20:03:36 2014 GMT
certificate-not-valid-after  Apr 07 20:03:36 2015 GMT

dns-name                     10.1.14.14
site-id                      100
domain-id                    1
system-ip                    172.16.255.19
register-interval            0:00:00:30
retry-interval               0:00:00:15
dns-cache-ttl                0:00:30:00
number-vbond-peers           1

INDEX   IP                  PORT
-------------------------------
0       10.1.14.14          12346

number-active-wan-interfaces 1

       PUBLIC           PUBLIC  PRIVATE          PRIVATE                                                  ADMIN     OPERATION
INDEX  IP               PORT    IP               PORT     VSMARTS  COLOR            CARRIER          STATE     STATE
-------------------------------------------------------------------------------------------------------------------------
0      10.0.5.19        12346   10.0.5.19        12346    2        default          default          up        up

vSmart# clear installed-certificates
Are you sure you want to clear installed certificates? [yes,NO] yes

vSmart# show control local-properties
organization-name            Cisco Inc
certificate-status           Not-Installed
root-ca-chain-status         Installed

certificate-validity         Valid
certificate-not-valid-before Apr 07 20:03:36 2014 GMT
certificate-not-valid-after  Apr 07 20:03:36 2015 GMT

dns-name                     10.1.14.14
site-id                      100
domain-id                    1
system-ip                    172.16.255.19
register-interval            0:00:00:30
retry-interval               0:00:00:15
dns-cache-ttl                0:00:30:00
number-vbond-peers           1

INDEX   IP                  PORT
-------------------------------
0       10.1.14.14          12346

number-active-wan-interfaces 1

       PUBLIC           PUBLIC  PRIVATE          PRIVATE                                                  ADMIN     OPERATION
INDEX  IP               PORT    IP               PORT     VSMARTS  COLOR            CARRIER          STATE     STATE
-------------------------------------------------------------------------------------------------------------------------
0      10.0.5.19        12346   10.0.5.19        12346    2        default          default          up        up
```

Related Topics

reboot, on page 94
request certificate, on page 100
request csr upload, on page 105
request root-cert-chain, on page 141
request vsmart-upload serial-file, on page 156
show control local-properties, on page 233

clear interface statistics

Zero interface statistics.

clear interface statistics [**interface** *interface-name*] [**queue** *queue-number*] [**vpn** *vpn-id*]

Syntax Description

(none)	Zero the statistics on all interfaces and all queues.
queue *queue-number*	Interface Queue: Zero the statistics on the specified queue.
interface *interface-name*	Specific Interface: Zero the statistics on the specified interface.
vpn *vpn-id*	VPN: Zero the interface statistics for interfaces in a specific VPN.

Command History

Release	Modification
14.1	Command introduced.

Examples

```
vEdge# show interface statistics

                RX                    RX      RX       TX                  TX      TX     RX   RX    TX   TX
VPN  INTERFACE  PACKETS   RX OCTETS   ERRORS  DROPS    PACKETS  TX OCTETS  ERRORS  DROPS  PPS  KBPS  PPS  KBPS
-------------------------------------------------------------------------------------------------------------
0    ge0/0      10756769  2545508661  0       1693399  9460046  1401233512  0       1      14   15    15   16
0    ge0/1      0         0           0       0        0        0           0       0      0    0     0    0
0    ge0/2      0         0           0       0        0        0           0       0      0    0     0    0
0    ge0/4      0         0           0       0        0        0           0       0      0    0     0    0
0    ge0/5      0         0           0       0        0        0           0       0      0    0     0    0
0    ge0/6      0         0           0       0        0        0           0       0      0    0     0    0
0    ge0/7      0         0           0       0        0        0           0       0      0    0     0    0
0    system     0         0           0       0        0        0           0       0      0    0     0    0
1    ge0/3      214082    68435255    0       37160    156849   14532821    0       3      4    2     4    2
512  mgmt0      0         0           0       0        0        0           0       0      0    0     0    0

vEdge# clear interface statistics
vEdge# show interface statistics

                RX       RX      RX      RX     TX       TX      TX      TX     RX   RX    TX   TX
VPN  INTERFACE  PACKETS  OCTETS  ERRORS  DROPS  PACKETS  OCTETS  ERRORS  DROPS  PPS  KBPS  PPS  KBPS
-----------------------------------------------------------------------------------------------
0    ge0/0      57       13592   0       8      51       7336    0       0      17   46    13   14
0    ge0/1      0        0       0       0      0        0       0       0      0    0     0    0
0    ge0/2      0        0       0       0      0        0       0       0      0    0     0    0
0    ge0/4      0        0       0       0      0        0       0       0      0    0     0    0
0    ge0/5      0        0       0       0      0        0       0       0      0    0     0    0
0    ge0/6      0        0       0       0      0        0       0       0      0    0     0    0
0    ge0/7      0        0       0       0      0        0       0       0      0    0     0    0
0    system     0        0       0       0      0        0       0       0      0    0     0    0
1    ge0/3      42       3744    0       0      26       2772    0       0      4    2     4    2
512  mgmt0      0        0       0       0      0        0       0       0      0    0     0
```

Related Topics

show interface, on page 265
show interface statistics, on page 290

clear ip leak routes vpn

To clear leaked routes for a VPN, use the **clear ip leak routes vpn** command.

clear ip leak routes vpn *vpn-id*

Command History

Release	Modification
Cisco SD-WAN Release 20.3.1	Command introduced.

clear ip mfib record

Clear the statistics for a particular group, source, or VPN from the Multicast Forwarding Information Base (MFIB) (on vEdge routers only).

clear ip mfib record group *group-address* **source** *source-address* **vpn** *vpn-id* [**upstream-iif** *interface-name*] [**upstream-tunnel** *ip-address*]

Syntax Description

group *group-address* **source** *source-address* **vpn** *vpn-id*	Clear Statistics from the MFIB: Clear the statistics for a particular group, source, or VPN from the MFIB.
upstream-iif *interface-name*	Upstream Interface: Clear the MFIB statistics for the specified upstream interface.
upstream-tunnel *ip-address*	Upstream Tunnel: Clear the MFIB statistics for the specified tunnel to a remote system.

Command History

Release	Modification
14.2	Command introduced.

Examples

```
vEdge# clear ip mfib record group 254.1.1.1 vpn 1 source 255.1.1.1
vEdge#
```

Related Topics

clear ip mfib stats, on page 40
show ip mfib summary, on page 299

clear ip mfib stats

Clear all statistics from the Multicast Forwarding Information Base (MFIB) (on vEdge routers only).

clear ip mfib stats

Examples

```
vEdge# clear ip mfib stats
vEdge#
```

Command History

Release	Modification
14.2	Command introduced.

Related Topics

clear ip mfib record, on page 39
show ip mfib stats, on page 298

clear ip nat filter

Clear the NAT translational filters (on vEdge routers only).

clear ip nat filter [*parameter*]

Syntax Description

parameter	Filter Parameter: Clear NAT translation filters associated with the specified parameter. *parameter* can be nat-ifname, nat-vpn-id, private-dest-address, private-dest-port, private-source-address, private-source-port, private-vpn-id, and proto. These parameters correspond to some of the column headers in the **show ip nat filter** command output.

Command History

Release	Modification
14.2	Command introduced.

Examples

```
vEdge# show ip nat filter nat-vpn
                              PRIVATE     PRIVATE     PRIVATE  PRIVATE  PUBLIC      PUBLIC      PUBLIC  PUBLIC
NAT  NAT                      SOURCE      DEST        SOURCE   DEST     SOURCE      DEST        SOURCE  DEST    FILTER       IDLE        OUTBOUND
OUTBOUND  INBOUND  INBOUND
VPN  IFNAME  VPN  PROTOCOL  ADDRESS     ADDRESS     PORT     PORT     ADDRESS     ADDRESS     PORT    PORT    STATE        TIMEOUT     PACKETS
OCTETS    PACKETS  OCTETS
-------------------------------------------------------------------------------------------------------------------------------------------------------
0    ge0/0   0    icmp      10.1.15.15  10.1.14.14  4697     4697     10.1.15.15  10.1.14.14  64931   64931   established  0:00:00:41  1
98        1        98
0    ge0/0   0    icmp      10.1.15.15  10.1.14.14  14169    14169    10.1.15.15  10.1.14.14  28467   28467   established  0:00:00:44  1
98        1        98
0    ge0/0   0    icmp      10.1.15.15  10.1.14.14  21337    21337    10.1.15.15  10.1.14.14  44555   44555   established  0:00:00:47  1
98        1        98
0    ge0/0   0    icmp      10.1.15.15  10.1.14.14  28505    28505    10.1.15.15  10.1.14.14  40269   40269   established  0:00:00:50  1
98        1        98
0    ge0/0   0    icmp      10.1.15.15  10.1.14.14  39513    39513    10.1.15.15  10.1.14.14  31859   31859   established  0:00:00:53  1
98        1        98
0    ge0/0   0    icmp      10.1.15.15  10.1.14.14  46681    46681    10.1.15.15  10.1.14.14  1103    1103    established  0:00:00:56  1
98        1        98
0    ge0/0   0    icmp      10.1.15.15  10.1.14.14  57176    57176    10.1.15.15  10.1.14.14  38730   38730   established  0:00:00:35  1
98        1        98
0    ge0/0   0    icmp      10.1.15.15  10.1.14.14  64600    64600    10.1.15.15  10.1.14.14  33274   33274   established  0:00:00:38  1
98        1        98
0    ge0/0   0    udp       10.1.15.15  10.0.5.19   12346    12346    10.1.15.15  10.0.5.19   64236   12346   established  0:00:19:59  38
8031      23       5551
0    ge0/0   0    udp       10.1.15.15  10.0.12.20  12346    12346    10.1.15.15  10.0.12.20  64236   12346   established  0:00:19:59  36
7470      23       5551
0    ge0/0   0    udp       10.1.15.15  10.0.12.22  12346    12346    10.1.15.15  10.0.12.22  64236   12346   established  0:00:19:59  679
598771    434      92925
0    ge0/0   0    udp       10.1.15.15  10.1.14.14  12346    12346    10.1.15.15  10.1.14.14  64236   12346   established  0:00:19:59  34
3825      9        3607
0    ge0/0   0    udp       10.1.15.15  10.1.14.14  12346    12350    10.1.15.15  10.1.14.14  64236   12350   established  0:00:19:59  38
5472      23       3634
0    ge0/0   0    udp       10.1.15.15  10.1.16.16  12346    12346    10.1.15.15  10.1.16.16  64236   12346   established  0:00:19:59  38
5472      23       3634

vEdge# clear ip nat filter proto icmp
vEdge# show ip nat filter nat-vpn
                              PRIVATE     PRIVATE     PRIVATE  PRIVATE  PUBLIC      PUBLIC      PUBLIC  PUBLIC
NAT  NAT                      SOURCE      DEST        SOURCE   DEST     SOURCE      DEST        SOURCE  DEST    FILTER       IDLE        OUTBOUND
OUTBOUND  INBOUND  INBOUND
VPN  IFNAME  VPN  PROTOCOL  ADDRESS     ADDRESS     PORT     PORT     ADDRESS     ADDRESS     PORT    PORT    STATE        TIMEOUT     PACKETS
OCTETS    PACKETS  OCTETS
-------------------------------------------------------------------------------------------------------------------------------------------------------
0    ge0/0   0    icmp      10.1.15.15  10.1.14.14  59484    59484    10.1.15.15  10.1.14.14  17148   17148   established  0:00:00:58  1
98        1        98
0    ge0/0   0    udp       10.1.15.15  10.0.5.19   12346    12346    10.1.15.15  10.0.5.19   64236   12346   established  0:00:19:59  143
25726     128      23166
0    ge0/0   0    udp       10.1.15.15  10.0.12.20  12346    12346    10.1.15.15  10.0.12.20  64236   12346   established  0:00:19:59  141
25165     128      23166
0    ge0/0   0    udp       10.1.15.15  10.0.12.22  12346    12346    10.1.15.15  10.0.12.22  64236   12346   established  0:00:19:59  788
617422    537      110350
0    ge0/0   0    udp       10.1.15.15  10.1.14.14  12346    12346    10.1.15.15  10.1.14.14  64236   12346   established  0:00:19:59  129
9335      9        3607
0    ge0/0   0    udp       10.1.15.15  10.1.14.14  12346    12350    10.1.15.15  10.1.14.14  64236   12350   established  0:00:19:59  227
32688     212      33496
0    ge0/0   0    udp       10.1.15.15  10.1.16.16  12346    12346    10.1.15.15  10.1.16.16  64236   12346   established  0:00:19:59  227
32688     212      33496
```

Related Topics

clear ip nat statistics, on page 41
nat
show ip nat filter, on page 300

clear ip nat statistics

Clear the NAT translational interface statistics (on vEdge routers only).

clear ip nat statistics [**interface** *interface-name*] [**vpn** *vpn-id*]

Syntax Description

interface *interface-name* **vpn** *vpn-id*	Specific Interface: Clear NAT translation statistics associated with the specified interface.
vpn *vpn-id*	Specific VPN: Clear NAT translation statistics associated with the specified VPN.

Command History

Release	Modification
14.2	Command introduced.

Examples

```
vEdge# show ip nat interface-statistics
                                                NAT   NAT     NAT     NAT                                    INBOUND
             NAT       NAT       NAT     NAT    MAP   FILTER  FILTER  STATE  NAT      OUTBOUND  INBOUND  ICMP              NAT        NAT
             OUTBOUND  INBOUND   ENCODE  DECODE ADD   ADD     LOOKUP  CHECK  POLICER  ICMP      ICMP     ERROR    NAT      FRAGMENTS  UNSUPPORTED
VPN  IFNAME  PACKETS   PACKETS   FAIL    FAIL   FAIL  FAIL    FAIL    FAIL   DROPS    ERROR     ERROR    DROPS    FRAGMENTS FAIL       PROTO
-------------------------------------------------------------------------------------------------------------------------------------------------
0    ge0/0   3852      3360      0       0      0     0       0       0      0        0         0        0        0          0          0

vEdge# clear ip nat statistics
vEdge# show ip nat interface-statistics
                                                NAT   NAT     NAT     NAT                                    INBOUND
             NAT       NAT       NAT     NAT    MAP   FILTER  FILTER  STATE  NAT      OUTBOUND  INBOUND  ICMP              NAT        NAT
             OUTBOUND  INBOUND   ENCODE  DECODE ADD   ADD     LOOKUP  CHECK  POLICER  ICMP      ICMP     ERROR    NAT      FRAGMENTS  UNSUPPORTED
VPN  IFNAME  PACKETS   PACKETS   FAIL    FAIL   FAIL  FAIL    FAIL    FAIL   DROPS    ERROR     ERROR    DROPS    FRAGMENTS FAIL       PROTO
-------------------------------------------------------------------------------------------------------------------------------------------------
0    ge0/0   44        41        0       0      0     0       0       0      0        0         0        0        0          0          0
```

Related Topics

clear ip nat filter, on page 40
nat
show ip nat interface-statistics, on page 302

clear ipv6 dhcp state

Clear IPv6 DHCP state on the local device (on vEdge routers and vSmart controllers only).

clear ipv6 dhcp state interface *interface-name* [**vpn** *vpn-id*]

Syntax Description

interface *interface-name*	Interface: Clear the DHCP state of a specific interface.
vpn *vpn-id*	VPN: Clear the DHCP state of an interface in the specified VPN.

Command History

Release	Modification
16.3	Command introduced.

Related Topics

clear dhcp state, on page 31
show dhcp interface, on page 244
show dhcp server, on page 245
show ipv6 dhcp interface, on page 315

clear ipv6 neighbor

Refresh dynamically created IPv6 entries in the Address Resolution Protocol (ARP) cache (on vEdge routers and vSmart controllers only).

To clear IPv4 entries in the ARP cache, use the **clear arp** command.

clear ipv6 neighbor [**interface** *interface-name*] [*ip-address*] [**vpn** *vpn-id*]

Syntax Description

(none)	Refresh all dynamic ARP cache entries.
interface *interface-name*	Interface: Refresh the dynamic ARP cache entries associated with the specific interface.
ip-address	IP Addresss: Refresh the dynamic ARP cache entries for the specified IP address.
vpn *vpn-id*	VPN: Refresh the dynamic ARP cache entries for the specific VPN.

Command History

Release	Modification
16.3	Command introduced.

Examples

```
Edge# show ipv6 neighbor

     IF
VPN  NAME   IP                          MAC                STATE    IDLE TIMER  UPTIME
-------------------------------------------------------------------------------------
0    ge0/0  2001::a01:f0d               00:0c:29:57:29:31  dynamic  0:00:00:00  0:00:06:07
0    ge0/0  2001::a01:f0f               00:0c:29:20:77:53  static   -           0:00:08:31
0    ge0/0  fe80::20c:29ff:fe20:7753    00:0c:29:20:77:53  static   -           0:00:26:32
0    ge0/0  fe80::20c:29ff:fe57:2931    00:0c:29:57:29:31  dynamic  0:00:00:00  0:00:08:06
0    ge0/1  2001::a01:110f              00:0c:29:20:77:5d  static   -           0:00:08:29
0    ge0/1  fe80::20c:29ff:fe20:775d    00:0c:29:20:77:5d  static   -           0:00:08:29
0    ge0/2  fe80::20c:29ff:fe20:7767    00:0c:29:20:77:67  static   -           0:00:26:36
0    ge0/3  2001::a00:140f              00:0c:29:20:77:71  static   -           0:00:08:29
0    ge0/3  fe80::20c:29ff:fe20:7771    00:0c:29:20:77:71  static   -           0:00:08:29
0    ge0/6  2001::3900:10f              00:0c:29:20:77:8f  static   -           0:00:08:28
0    ge0/6  fe80::20c:29ff:fe20:778f    00:0c:29:20:77:8f  static   -           0:00:08:28
0    ge0/7  fe80::20c:29ff:fe20:7799    00:0c:29:20:77:99  static   -           0:00:26:06

vEdge# clear ipv6 neighbor
```

```
vEdge# show ipv6 neighbor

     IF
VPN  NAME   IP                          MAC                STATE    IDLE TIMER  UPTIME
-------------------------------------------------------------------------------------
0    ge0/0  2001::a01:f0f               00:0c:29:20:77:53  static   -           0:00:08:31
0    ge0/0  fe80::20c:29ff:fe20:7753    00:0c:29:20:77:53  static   -           0:00:26:32
0    ge0/1  2001::a01:110f              00:0c:29:20:77:5d  static   -           0:00:08:29
0    ge0/1  fe80::20c:29ff:fe20:775d    00:0c:29:20:77:5d  static   -           0:00:08:29
0    ge0/2  fe80::20c:29ff:fe20:7767    00:0c:29:20:77:67  static   -           0:00:26:36
0    ge0/3  2001::a00:140f              00:0c:29:20:77:71  static   -           0:00:08:29
0    ge0/3  fe80::20c:29ff:fe20:7771    00:0c:29:20:77:71  static   -           0:00:08:29
0    ge0/6  2001::3900:10f              00:0c:29:20:77:8f  static   -           0:00:08:28
0    ge0/6  fe80::20c:29ff:fe20:778f    00:0c:29:20:77:8f  static   -           0:00:08:28
0    ge0/7  fe80::20c:29ff:fe20:7799    00:0c:29:20:77:99  static   -           0:00:26:06
```

Related Topics

clear arp, on page 20
show arp, on page 185
show ipv6 neighbor, on page 320

clear ipv6 policy

Reset all counters for IPv6 access lists (on vEdge routers only).

clear policy access-list name *acl-name*

Syntax Description

name *acl-name*	Access List Counters: Zero the counters associated with the specified access list.

Command History

Release	Modification
16.3	Command introduced.

Related Topics

clear policy, on page 56
show ipv6 policy access-list-counters, on page 321
show ipv6 policy access-list-names, on page 322

clear omp all

Reset OMP peering sessions with all OMP peers (on vSmart controllers and vEdge routers only).

clear omp all

Command History

Release	Modification
14.1	Command introduced.

Examples

```
vEdge# show omp peers
R -> routes received
I -> routes installed
S -> routes sent
Peer             Type    Domain-ID  Site-ID  State    Uptime           R/I/S
-------------------------------------------------------------------------------
1.1.200.2        vsmart  1          3        up       7:17:00:04       65/51/15
1.1.200.3        vsmart  1          11740    up       3:00:29:33       65/0/15

vEdge# clear omp all
vEdge# show omp peers
Peer             Type    Domain-ID  Site-ID  State    Uptime          R/I/S
-------------------------------------------------------------------------------
1.1.200.2        vsmart  1          3        idle     -               65/51/15
1.1.200.3        vsmart  1          11740    idle     -               65/0/15
```

Related Topics

clear control connections, on page 28
clear omp peer, on page 45
clear omp routes, on page 47
clear omp tlocs, on page 47
show omp peers, on page 348

clear omp peer

Reset the OMP peering sessions with a specific peer (on vSmart controllers and vEdge routers only). When you reset a peering session, the routes to that peer are removed from the OMP route table, and they are reinstalled when the peer comes back up.

clear omp peer *ip-address* [**soft** (**in** |**out**)]

Syntax Description

(none)	Reset the specific peering session.
soft in |**out**	Refresh the Peering Session: Re-apply the inbound or outbound policy to the specific peering session.

Command History

Release	Modification
14.1	Command introduced.

Examples

```
vEdge# show omp peers
R -> routes received
I -> routes installed
S -> routes sent
                        DOMAIN    SITE
PEER             TYPE   ID        ID        STATE    UPTIME           R/I/S
-------------------------------------------------------------------------
172.16.255.19    vsmart 1         100       up       0:00:08:32       11/11/0
172.16.255.20    vsmart 1         200       up       0:00:08:31       11/0/0

vEdge# show omp routes
Code:
C   -> chosen
I   -> installed
Red -> redistributed
Rej -> rejected
L   -> looped
R   -> resolved
S   -> stale
Ext -> extranet
Inv -> invalid

ADDRESS                                      PATH
FAMILY   VPN  PREFIX             FROM PEER      ID    LABEL  STATUS  TLOC IP         COLOR  ENCAP  PREFERENCE
-------------------------------------------------------------------------------------------------------------
ipv4     1    10.2.2.0/24        172.16.255.19  133   3806   C,I,R   172.16.255.11   lte    ipsec  -
                                 172.16.255.20  43    3806   C,R     172.16.255.11   lte    ipsec  -
         1    10.2.3.0/24        172.16.255.19  134   16355  C,I,R   172.16.255.21   lte    ipsec  -
                                 172.16.255.20  44    16355  C,R     172.16.255.21   lte    ipsec  -
         1    10.20.24.0/24      172.16.255.19  127   34885  C,I,R   172.16.255.15   lte    ipsec  -
                                 172.16.255.20  20    34885  C,R     172.16.255.15   lte    ipsec  -
         1    10.20.25.0/24      172.16.255.19  131   61944  C,I,R   172.16.255.16   lte    ipsec  -
                                 172.16.255.20  17    61944  C,R     172.16.255.16   lte    ipsec  -
         1    56.0.1.0/24        172.16.255.19  126   34885  C,I,R   172.16.255.15   lte    ipsec  -
                                 172.16.255.20  19    34885  C,R     172.16.255.15   lte    ipsec  -
         1    60.0.1.0/24        172.16.255.19  130   61944  C,I,R   172.16.255.16   lte    ipsec  -
                                 172.16.255.20  16    61944  C,R     172.16.255.16   lte    ipsec  -
         1    61.0.1.0/24        172.16.255.19  129   61944  C,I,R   172.16.255.16   lte    ipsec  -
                                 172.16.255.20  15    61944  C,R     172.16.255.16   lte    ipsec  -
         1    172.16.255.112/32  172.16.255.19  135   3806   C,I,R   172.16.255.11   lte    ipsec  -
                                 172.16.255.19  136   16355  C,I,R   172.16.255.21   lte    ipsec  -
                                 172.16.255.20  45    3806   C,R     172.16.255.11   lte    ipsec  -
                                 172.16.255.20  46    16355  C,R     172.16.255.21   lte    ipsec  -
         1    172.16.255.117/32  172.16.255.19  128   34885  C,I,R   172.16.255.15   lte    ipsec  -
                                 172.16.255.20  21    34885  C,R     172.16.255.15   lte    ipsec  -
         1    172.16.255.118/32  172.16.255.19  132   61944  C,I,R   172.16.255.16   lte    ipsec  -
                                 172.16.255.20  18    61944  C,R     172.16.255.16   lte    ipsec  -

vEdge# clear omp peer 172.16.255.19

vm4# show omp peers
R -> routes received
I -> routes installed
S -> routes sent

                        DOMAIN    SITE
PEER             TYPE   ID        ID        STATE    UPTIME           R/I/S
-------------------------------------------------------------------------
172.16.255.19    vsmart 1         100       up       0:00:00:00       0/0/0
172.16.255.20    vsmart 1         200       up       0:00:09:01       11/11/0

vEdge# show omp routes
Code:
C   -> chosen
I   -> installed
Red -> redistributed
Rej -> rejected
L   -> looped
R   -> resolved
S   -> stale
Ext -> extranet
Inv -> invalid

ADDRESS                                      PATH
FAMILY   VPN  PREFIX             FROM PEER      ID    LABEL  STATUS  TLOC IP         COLOR  ENCAP  PREFERENCE
-------------------------------------------------------------------------------------------------------------
ipv4     1    10.2.2.0/24        172.16.255.20  43    3806   C,I,R   172.16.255.11   lte    ipsec  -
         1    10.2.3.0/24        172.16.255.20  44    16355  C,I,R   172.16.255.21   lte    ipsec  -
         1    10.20.24.0/24      172.16.255.20  20    34885  C,I,R   172.16.255.15   lte    ipsec  -
         1    10.20.25.0/24      172.16.255.20  17    61944  C,I,R   172.16.255.16   lte    ipsec  -
         1    56.0.1.0/24        172.16.255.20  19    34885  C,I,R   172.16.255.15   lte    ipsec  -
         1    60.0.1.0/24        172.16.255.20  16    61944  C,I,R   172.16.255.16   lte    ipsec  -
```

```
1    61.0.1.0/24         172.16.255.20  15    61944  C,I,R   172.16.255.16  lte    ipsec  -
1    172.16.255.112/32   172.16.255.20  45    3806   C,I,R   172.16.255.11  lte    ipsec  -
                         172.16.255.20  46    16355  C,I,R   172.16.255.21  lte    ipsec  -
1    172.16.255.117/32   172.16.255.20  21    34885  C,I,R   172.16.255.15  lte    ipsec  -
1    172.16.255.118/32   172.16.255.20  18    61944  C,I,R   172.16.255.16  lte    ipsec  -
```

Related Topics

clear omp all, on page 44
clear omp routes, on page 47
clear omp tlocs, on page 47
show omp peers, on page 348

clear omp routes

Recalculate the OMP routes and resend the routes to the IP route table (on vSmart controllers and vEdge routers only).

clear omp routes

Command History

Release	Modification
14.1	Command introduced.

Examples

```
vEdge# clear omp routes
vEdge#
```

Related Topics

clear omp all, on page 44
clear omp peer, on page 45
clear omp tlocs, on page 47
show omp routes, on page 352

clear omp tlocs

Recalculate the OMP TLOCs and resend the TLOCs to the route table (on vSmart controllers and vEdge routers only).

clear omp tlocs

Command History

Release	Modification
14.1	Command introduced.

Example

```
vEdge# clear omp tlocs
vEdge#
```

Related Topics

clear omp all, on page 44
clear omp peer, on page 45
clear omp routes, on page 47
show omp tlocs, on page 362

clear orchestrator connections-history

Clear the history of connections and connection attempts made by the vBond orchestrator (on vBond orchestrators only).

clear orchestrator connections-history

Command History

Release	Modification
16.1	Command introduced.

Examples

Show orchestrator connections-history

```
vEdge# show orchestrator connections-history
Legend for Errors
BDSGVERFL  - Board ID signature verify failure       ORPTMO    - Remote client peer timeout
BIDNTPR    - Board ID not initialized                RMGSPR    - Remove global saved peer
BIDNTVRFD  - Peer board ID certificate not verified  RXTRDWN   - Received teardown
CRTREJSER  - Challenge response rejected by peer     RDSIGFBD  - Read signature from board ID failed
CRTVERFL   - Fail to verify peer certificate         SSLNFAIL  - Failure to create new SSL context
CTORGNMMIS - Certificate organization name mismatch  SERNTPRES - Serial number not present
DCONFAIL   - DTLS connection failure                 TMRALC    - Memory failure
DEVALC     - Device memory allocation failures       TUNALC    - Memory failure
DHSTMO     - DTLS handshake timeout                  UNMSGBDRG - Unknown message type or bad register message
DISCVBD    - Disconnect vBond after register reply   UNAUTHEL  - Recd hello from unauthenticated peer
DISTLOC    - TLOC disabled                           VBDEST    - vDaemon process terminated
DUPSER     - Duplicate serial number                 VECRTREV  - vEdge certification revoked
IP_TOS     - Socket options failure                  VSCRTREV  - vSmart certificate revoked
LISFD      - Listener socket FD error                VB_TMO    - Peer vBond timed out
MEMALCFL   - Memory allocation failure               VM_TMO    - Peer vManage timed out
NOACTVB    - No active vBond found to connect to     VP_TMO    - Peer vEdge timed out
NOERR      - No error                                VS_TMO    - Peer vSmart timed out
NOSLPRCRT  - Unable to get peer's certificate        XTVSTRDN  - Extra vSmart teardown

                                                                 PEER     PEER            PEER
PEER     PEER     PEER            SITE       DOMAIN     PEER            PRIVATE  PEER            PUBLIC                  LAST                            TIME WHEN
TYPE     PROTOCOL SYSTEM IP       ID         ID         PRIVATE IP      PORT     PUBLIC IP       PORT    REMOTE COLOR    STATE              LOCAL/REMOTE    LAST CHANGED
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------
vedge    dtls     172.16.255.14   400        1          10.1.14.14      12350    10.1.14.14      12350   lte             trying             RXTRDWN/DISCVBD   2014-07-21T18:23:14
vedge    dtls     172.16.255.16   600        1          10.1.16.16      12346    10.1.16.16      12346   lte             trying             RXTRDWN/DISCVBD   2014-07-21T18:23:14
vedge    dtls     172.16.255.15   500        1          10.1.15.15      12346    10.1.15.15      12346   lte             trying             RXTRDWN/DISCVBD   2014-07-21T18:23:00
vedge    dtls     172.16.255.15   500        1          10.1.15.15      12346    10.1.15.15      12346   lte             trying             RXTRDWN/DISCVBD   2014-07-21T18:22:44
vedge    dtls     172.16.255.16   600        1          10.1.16.16      12346    10.1.16.16      12346   lte             trying             RXTRDWN/DISCVBD   2014-07-21T18:22:43
vedge    dtls     172.16.255.14   400        1          10.1.14.14      12350    10.1.14.14      12350   lte             trying             RXTRDWN/DISCVBD   2014-07-21T18:22:28
vmanage  dtls     172.16.255.22   200        0          10.0.12.22      12346    10.0.12.22      12346   default         tear_down           VM_TMO/NOERR     2014-07-21T18:22:28
vedge    dtls     172.16.255.15   500        1          10.1.15.15      12346    10.1.15.15      12346   lte             trying             RXTRDWN/DISCVBD   2014-07-21T13:39:47
vedge    dtls     172.16.255.14   400        1          10.1.14.14      12350    10.1.14.14      12350   lte             trying             RXTRDWN/DISCVBD   2014-07-21T13:39:46
vedge    dtls     172.16.255.16   600        1          10.1.16.16      12346    10.1.16.16      12346   lte             trying             RXTRDWN/DISCVBD   2014-07-21T13:39:46
vedge    dtls     172.16.255.15   500        1          10.1.15.15      12346    10.1.15.15      12346   lte             trying             RXTRDWN/DISCVBD   2014-07-21T13:39:31
vedge    dtls     172.16.255.14   400        1          10.1.14.14      12350    10.1.14.14      12350   lte             trying             RXTRDWN/DISCVBD   2014-07-21T13:39:31
vedge    dtls     172.16.255.16   600        1          10.1.16.16      12346    10.1.16.16      12346   lte             trying             RXTRDWN/DISCVBD   2014-07-21T13:39:31
vsmart   dtls     172.16.255.20   100        1          10.0.12.20      12346    10.0.12.20      12346   default         up                 RXTRDWN/DISTLOC   2014-07-21T13:39:15
vedge    dtls     172.16.255.16   600        1          10.1.16.16      12346    10.1.16.16      12346   lte             trying             RXTRDWN/DISCVBD   2014-07-21T13:39:10
```

```
vedge    dtls     172.16.255.14    400        1          10.1.14.14      12350    10.1.14.14      12350    lte            trying           RXTRDWN/DISCVBD   2014-07-21T13:39:10
vedge    dtls     172.16.255.15    500        1          10.1.15.15      12346    10.1.15.15      12346    lte            trying           RXTRDWN/DISCVBD   2014-07-21T13:39:10
vBond# clear orchestrator connections-history
vBond# show orchestrator connections-history
vBond#
```

Related Topics

clear control connections-history, on page 28
show control connections, on page 227
show orchestrator connections-history, on page 370
show orchestrator local-properties, on page 373
show orchestrator statistics, on page 375

clear ospf all

Reset OSPF in a VPN (on vEdge routers only).

clear ospf all *vpn vpn-id*

Syntax Description

vpn *vpn-id*	VPN: Reset OSPF in the specified VPN.

Command History

Release	Modification
14.1	Command introduced.

Examples

```
vEdge# show ospf neighbor vpn 1
DBsmL -> Database Summary List
RqstL -> Link State Request List
RXmtl -> Link State Retransmission List

                  IF     IF                                    DEAD
VPN  ADDRESS      INDEX  NAME   NEIGHBOR ID    STATE  PRI  TIME  DBsmL  RqstL  RXmtL
-------------------------------------------------------------------------------------
1    10.20.24.17  0      ge0/4  172.16.255.17  full   1    31    0      0      0

vEdge# clear ospf all vpn 1
vEdge# show ospf neighbor vpn 1
%  No entries found.
```

Related Topics

show ospf neighbor, on page 385

clear ospf database

Delete the entries in the OSPF link-state database learned from OSPF neighbors (on vEdge routers only). Use this command for troubleshooting OSPF or to reset the link-state database if you suspect that it has been corrupted.

clear ospf database vpn *vpn-id*

Syntax Description

vpn *vpn-id*	VPN: Clear the OSPF link-state database of entries from the specified VPN.

Command History

Release	Modification
14.2	Command introduced.

Examples

```
vEdge# show ospf database router
            LSA                LINK             ADVERTISING
VPN  AREA   TYPE               ID               ROUTER           AGE      CHECKSUM  SEQ#
-------------------------------------------------------------------------------------------
1    0      router             172.16.255.15    172.16.255.15    143      0x27ee    0x8000000f
1    0      router             172.16.255.17    172.16.255.17    24       0x27ea    0x8000000d

vEdge# clear ospf database vpn 1
vEdge# show ospf database router
            LSA                LINK             ADVERTISING
VPN  AREA   TYPE               ID               ROUTER           AGE      CHECKSUM  SEQ#
-------------------------------------------------------------------------------------------
1    0      router             172.16.255.15    172.16.255.15    164      0x27ee    0x8000000f
```

Related Topics

show ospf database, on page 380

clear pim interface

Clear PIM interfaces, and relearn all PIM neighbors and joins (on vEdge routers only).

clear pim interface vpn *vpn-id* [*interface-name*]

Syntax Description

interface-name **vpn** *vpn-id*	Interface Name: Release the PIM neighbors and joins on a specific interface in a specific VPN.

Command History

Release	Modification
14.2	Command introduced.

Examples

```
vEdge# clear pim interface interface ge0/0 vpn 1
vEdge#
```

Related Topics

clear pim neighbor, on page 51
clear pim protocol, on page 52
clear pim rp-mapping, on page 53
clear pim statistics, on page 54
show multicast replicator, on page 335
show multicast rpf, on page 337
show multicast topology, on page 338
show multicast tunnel, on page 339
show omp multicast-routes, on page 347
show pim interface, on page 394
show pim neighbor, on page 395
show pim rp-mapping, on page 396
show pim statistics, on page 397

clear pim neighbor

Clear a PIM neighbor (on vEdge routers only).

clear pim neighbor *ip-address* **vpn** *vpn-id*

Syntax Description

ip-address **vpn** *vpn-id*	Neighbor To Clear: Clear a specific neighbor in the specified VPN.

Command History

Release	Modification
14.2	Command introduced.

Examples

```
vEdge# clear pim neighbor 254.1.1.1 vpn 1
vEdge#
```

Related Topics

clear pim interface, on page 50
clear pim protocol, on page 52
clear pim rp-mapping, on page 53
clear pim statistics, on page 54
show multicast replicator, on page 335
show multicast rpf, on page 337
show multicast topology, on page 338
show multicast tunnel, on page 339
show omp multicast-routes, on page 347
show pim interface, on page 394
show pim neighbor, on page 395
show pim rp-mapping, on page 396
show pim statistics, on page 397

clear pim protocol

Clear all PIM protocol state (on vEdge routers only).

clear pim protocol vpn *vpn-id*

Syntax Description

vpn *vpn-id*	VPN: Clear the PIM protocol state for the specified VPN.

Command History

Release	Modification
14.2	Command introduced.

Examples

```
vEdge# clear pim protocol vpn 1
vEdge#
```

Related Topics

clear pim interface, on page 50
clear pim neighbor, on page 51
clear pim rp-mapping, on page 53
clear pim statistics, on page 54
show multicast replicator, on page 335
show multicast rpf, on page 337
show multicast topology, on page 338
show multicast tunnel, on page 339

show omp multicast-routes, on page 347
show pim interface, on page 394
show pim neighbor, on page 395
show pim rp-mapping, on page 396
show pim statistics, on page 397

clear pim rp-mapping

Clear the mappings of multicast groups to RPs (on vEdge routers only).

clear pim rp-mapping [**vpn** *vpn-id*]

Syntax Description

(none)	Clear all group-to-RP mappings.
vpn *vpn-id*	VPN: Clear the group-to-RP mappings for a specific VPN.

Command History

Release	Modification
14.3	Command introduced.

Examples

```
vEdge# show pim rp-mapping
VPN TYPE     GROUP            RP ADDRESS
---------------------------------------
1     Auto-RP 224.0.0.0/4 60.0.1.100
2     Auto-RP 224.0.0.0/4 60.0.2.100
vEdge# clear pim rp-mapping
vEdge# show pim rp-mapping
%  No entries found.
```

Related Topics

clear pim interface, on page 50
clear pim neighbor, on page 51
clear pim protocol, on page 52
clear pim statistics, on page 54
show multicast replicator, on page 335
show multicast rpf, on page 337
show multicast topology, on page 338
show multicast tunnel, on page 339
show omp multicast-routes, on page 347
show pim interface, on page 394
show pim neighbor, on page 395

show pim rp-mapping, on page 396
show pim statistics, on page 397

clear pim statistics

Clear all PIM-related statistics on the router, and relearn all PIM neighbors and joins (on vEdge routers only).

clear pim statistics [**vpn** *vpn-id*]

Syntax Description

(none)	Clear all PIM statistics, neighbors, and joins, and then relearn them.
vpn *vpn-id*	VPN: Clear the PIM statistics, neighbors, and joins in the specified VPN, and then relearn them.

Command History

Release	Modification
14.2	Command introduced.

Examples

```
vEdge# show pim statistics
VPN 1 STATISTICS
-----------------------------------------
MESSAGE TYPE         RECEIVED          SENT
-----------------------------------------
Hello                    2455          2528
Join-Prune                115            82
AutoRP Announce             0             -
AutoRP Mapping              0             -
Unsupported                 0             -
Unknown                     0             -
Bad                      1440             -
vEdge# clear pim statistics
vEdge# show pim statistics
VPN 1 STATISTICS
-----------------------------------------
MESSAGE TYPE         RECEIVED          SENT
-----------------------------------------
Hello                       0             0
Join-Prune                  0             0
AutoRP Announce             0             -
AutoRP Mapping              0             -
Unsupported                 0             -
Unknown                     0             -
Bad                         0             -
```

Related Topics

clear pim interface, on page 50
clear pim neighbor, on page 51
clear pim protocol, on page 52

clear pim rp-mapping, on page 53
show multicast replicator, on page 335
show multicast rpf, on page 337
show multicast topology, on page 338
show multicast tunnel, on page 339
show omp multicast-routes, on page 347
show pim interface, on page 394
show pim neighbor, on page 395
show pim rp-mapping, on page 396
show pim statistics, on page 397

clear policer statistics

Clear the policer out-of-specification (OOS) packet statistics (on vEdge routers only). A policed packet is out of specification when the policer does not allow it to pass. Depending on the policer configuration, these packets are either dropped or they are remarked, which sets the packet loss priority (PLP) value on the egress interface to high.

clear policer statistics

Command History

Release	Modification
16.3	Command introduced.

Examples

Clear the policer OOS packet statistics

```
vEdge# show policer
                                                          OOS     OOS
NAME       INDEX  DIRECTION  RATE          BURST  ACTION  PKTS
-------------------------------------------------------------------
ge0_0_llq  10     out        200000000000  15000  drop    2499
ge0_3_llq  11     out        200000000000  15000  drop    3212

vEdge# clear policer statistics
vEdge# show policer
                                                          OOS     OOS
NAME       INDEX  DIRECTION  RATE          BURST  ACTION  PKTS
-------------------------------------------------------------------
ge0_0_llq  10     out        200000000000  15000  drop    0
ge0_3_llq  11     out        200000000000  15000  drop    0
```

Related Topics

show policer, on page 401
show policy data-policy-filter, on page 406
show policy from-vsmart, on page 409

clear policy

Reset all counters for IPv4 access lists or data policies (on vSmart controllers and vEdge routers only).

clear policy (**access-list** *acl-name* | **app-route-policy** *policy-name* | **data-policy** *policy-name*)

Syntax Description

access-list *acl-name*	Access List Counters: Zero the counters associated with the specified access list.
app-route-policy *policy-name*	Application-Aware Routing Policy Counter: Zero the counters associated with the specified application-aware routing policy.
data-policy *policy-name*	Data Policy Counters: Zero the counters associated with the specified data policy.

Command History

Release	Modification
14.1	Command introduced.

Related Topics

clear ipv6 policy, on page 44

clear policy zbfw filter-statistics

Clear the count of the packets that match a zone-based firewall's match criteria and the number of bytes that match the criteria (on vEdge routers only).

clear policy zbfw filter-statistics

Command History

Release	Modification
18.2	Command introduced.

Examples

Display statistics about packets that the router has processed with zone-based firewall policy

```
vEdge# show policy zbfw filter-staatistics

NAME           COUNTER NAME   PACKETS  BYTES
-----------------------------------------------
ZONE-POLICY-1  counter_seq_1  2        196
```

```
vEdge# show policy zbfw filter-staatistics
vEdge#
```

Related Topics

show policy zbfw filter-statistics, on page 415

clear policy zbfw global-statistics

Zero the statistics about the packets processed by zone-based firewalls (on vEdge routers only).

clear policy zbfw global-statistics

Command History

Release	Modification
18.2	Command introduced.

Examples

Clear the statistics about packets that the router has processed with zone-based firewalls

```
vEdge# clear zbfw global-statistics
vEdge# show zbfw global-statistics
        fragments                    : 0
        fragments fail               : 0
        state check fail             : 0
        flow add fail                : 0
        unsupported proto            : 0
        number of flow entries       : 0
        max half open exceeded       : 0

        Packets Implicitly Dropped   :
          During Policy Change       : 0
          No Pair for Diff Zone      : 0
          Zone to No Zone            : 0

        Packets Implicitly Allowed   :
          No Pair Same Zone          : 0
          No Zone to No Zone         : 0
```

Related Topics

show policy zbfw global-statistics, on page 415

clear policy zbfw sessions

Clear the session flow information for zone pairs configured with a zone-based firewall policy (on vEdge routers only).

show policy zbfw sessions [**name** *pair-name*]

Syntax Description

(none)	Clear the session flow entries for all zone pairs.
name *pair-name*	Zone Pair Name: Clear the session flow entries for the specified zone pair.

Command History

Release	Modification
18.2	Command introduced.

Examples

Clear all session flow information

```
vEdge# show policy zbfw sessions

ZONE PAIR      SOURCE IP    DESTINATION  SOURCE  DESTINATION           SOURCE  DESTINATION  IDLE        OUTBOUND  OUTBOUND  INBOUND  INBOUND
FILTER
NAME      VPN  ADDRESS      IP ADDRESS   PORT    PORT         PROTOCOL  VPN     VPN          TIMEOUT     PACKETS   OCTETS    PACKETS  OCTETS   STATE

-------------------------------------------------------------------------------------------------------------------------------------------------
zp1       1    10.20.24.17  10.20.25.18  44061   5001         TCP       1       1            0:00:59:59  12552     17581337  6853     463590
established
zp1       1    10.20.24.17  10.20.25.18  44062   5001         TCP       1       1            0:01:00:00  10151     14217536  5561     375290
established
zp1       1    10.20.24.17  10.20.25.18  44063   5001         TCP       1       1            0:00:59:59  7996      11198381  4262     285596
established
zp1       1    10.20.24.17  10.20.25.18  44064   5001         TCP       1       1            0:00:59:59  7066      9895451   3826     257392
established
zp1       1    10.20.24.17  10.20.25.18  44065   5001         TCP       1       1            0:00:59:59  13471     18868856  7440     504408
established
zp1       1    10.20.24.17  10.20.25.18  44066   5001         TCP       1       1            0:00:59:59  8450      11834435  4435     295718
established
vEdge# clear policy zbfw sessions
vEdge# show policy zbfw sessions

ZONE PAIR      SOURCE IP    DESTINATION  SOURCE  DESTINATION           SOURCE  DESTINATION  IDLE        OUTBOUND  OUTBOUND  INBOUND  INBOUND
FILTER
NAME      VPN  ADDRESS      IP ADDRESS   PORT    PORT         PROTOCOL  VPN     VPN          TIMEOUT     PACKETS   OCTETS    PACKETS  OCTETS   STATE

-------------------------------------------------------------------------------------------------------------------------------------------------
zp1       1    10.20.24.17  10.20.25.18  44061   5001         TCP       1       1            0:00:59:59  0         0         0        0
established
zp1       1    10.20.24.17  10.20.25.18  44062   5001         TCP       1       1            0:01:00:00  0         0         0        0
established
zp1       1    10.20.24.17  10.20.25.18  44063   5001         TCP       1       1            0:00:59:59  0         0         0        0
established
zp1       1    10.20.24.17  10.20.25.18  44064   5001         TCP       1       1            0:00:59:59  0         0         0        0
established
zp1       1    10.20.24.17  10.20.25.18  44065   5001         TCP       1       1            0:00:59:59  0         0         0        0
established
zp1       1    10.20.24.17  10.20.25.18  44066   5001         TCP       1       1            0:00:59:59  0         0         0        0
established
```

Related Topics

show policy zbfw sessions, on page 419

clear pppoe statistics

Zero PPPoE statistics.

clear pppoe statistics

Command History

Release	Modification
15.3.3	Command introduced.

Examples

```
vEdge# show pppoe statistics

      pppoe_tx_pkts             :      73
      pppoe_rx_pkts             :      39
      pppoe_tx_session_drops    :      0
      pppoe_rx_session_drops    :      0
      pppoe_inv_discovery_pkts  :      0
      pppoe_ccp_pkts            :      12
      pppoe_ipcp_pkts           :      16
      pppoe_lcp_pkts            :      35
      pppoe_padi_pkts           :      4
      pppoe_pado_pkts           :      2
      pppoe_padr_pkts           :      2
      pppoe_pads_pkts           :      2
      pppoe_padt_pkts           :      2

vEdge# clear pppoe statistics
vEdge# show pppoe statistics

      pppoe_tx_pkts             :      0
      pppoe_rx_pkts             :      0
      pppoe_tx_session_drops    :      0
      pppoe_rx_session_drops    :      0
      pppoe_inv_discovery_pkts  :      0
      pppoe_ccp_pkts            :      0
      pppoe_ipcp_pkts           :      0
      pppoe_lcp_pkts            :      0
      pppoe_padi_pkts           :      0
      pppoe_pado_pkts           :      0
      pppoe_padr_pkts           :      0
      pppoe_pads_pkts           :      0
      pppoe_padt_pkts           :      0
```

Related Topics

show ppp interface, on page 420
show pppoe session, on page 421
show pppoe statistics, on page 421

clear reverse-proxy context

Clear an installed proxy certificate and reset the control connections that are associated with the proxy (on vEdge routers only).

clear reverse-proxy context

Command History

Release	Modification
18.2	Command introduced.

Examples

Clear the installed proxy certificate on a vEdge router

```
vEdge# show certificate reverse-proxy

Reverse proxy certificate
-------------------

Certificate:
    Data:
        Version: 1 (0x0)
        Serial Number: 2 (0x2)
    Signature Algorithm: sha256WithRSAEncryption
        Issuer: C=US, ST=California, O=Viptela, OU=ViptelaVmanage,
CN=813fd02c-acca-4c19-857b-119da60f257f
        Validity
            Not Before: May 11 21:43:29 2018 GMT
            Not After : May  4 21:43:29 2048 GMT
       Subject: C=US, ST=California, CN=47bd1f2b-3abe-41cd-9b9f-e84db7fd2377, O=ViptelaClient

        Subject Public Key Info:
            Public Key Algorithm: rsaEncryption
                Public-Key: (2048 bit)
                Modulus:
                    00:d5:2e:f3:68:8b:0d:7b:3f:0d:ca:a3:74:7c:dd:
                    70:0c:25:26:ac:8b:8f:37:60:00:4b:fc:4d:3f:11:
                    d9:94:df:31:4c:f8:a5:88:8b:65:e8:d5:21:7c:47:
                    21:34:8e:93:c7:7f:24:6d:2b:4c:51:9b:a7:f8:8f:
                    0f:e2:f4:85:0e:49:dd:ed:6b:ed:40:d2:5e:a0:7c:
                    a6:7f:26:d2:ff:2b:a4:39:34:51:0f:3d:7f:85:31:
                    b4:c9:ec:06:d4:37:03:ac:41:5a:34:3d:96:4f:d9:
                    cd:be:e3:22:7a:9b:24:1b:3b:c9:5c:c5:48:97:5d:
                    7a:7a:8e:80:ab:e8:a2:8f:b3:35:45:07:b0:46:2e:
                    b9:d5:4c:8c:42:6a:1e:8a:90:a4:11:76:6f:61:07:
                    1d:2a:c9:9d:57:42:87:3f:5b:d1:91:0b:7c:8c:f2:
                    62:68:a7:e3:d5:da:c9:40:a3:c4:1a:ae:4f:d5:6c:
                    2e:ec:2e:dc:2f:06:31:a8:da:13:b0:e4:3a:16:17:
                    2d:7a:30:ee:b2:e0:d5:93:a9:53:ee:e5:b2:68:5a:
                    d9:2b:82:93:5e:65:7d:63:8f:0a:8c:39:0b:f0:64:
                    ec:4a:cb:91:c0:59:37:31:dc:31:75:40:df:2c:8f:
                    67:f1:bf:b6:5e:40:ce:a5:c6:59:d0:c4:e2:11:2b:
                    0c:c3
                Exponent: 65537 (0x10001)
    Signature Algorithm: sha256WithRSAEncryption
         0b:5e:9d:30:29:dd:4a:25:5f:44:6d:02:15:35:72:d9:44:33:
         fa:a7:b5:d5:f5:68:09:47:81:ba:22:46:1a:c5:aa:a6:69:10:
         93:40:8c:18:34:b5:1f:57:a3:2d:7d:9f:86:76:b9:51:2d:2c:
         5f:ce:74:1c:66:5e:1d:e5:8c:26:02:e4:63:fe:b1:1b:a5:e2:
         3a:03:07:23:ca:43:38:93:49:cf:3c:d0:5d:c3:33:cd:d6:26:
         8b:a9:b8:5f:63:80:99:09:d6:dd:fb:14:43:bf:17:03:6b:2d:
         59:c5:cb:41:6d:7e:9e:c8:27:13:10:d5:05:df:cc:b2:7a:81:
         b1:9f:11:60:3a:69:67:25:b4:f3:ab:36:a7:d1:88:bb:7b:72:
         b2:b4:63:df:4b:42:74:7f:99:04:4a:bb:76:0a:46:53:71:1a:
         db:8a:1c:93:8f:fa:ae:5b:8d:9e:e5:10:07:a1:5d:d9:88:a1:
```

```
        2d:04:13:9f:11:c8:8b:6b:b0:59:f9:48:14:c8:c4:9e:ff:6a:
        38:12:92:e3:20:fa:f7:f0:58:34:16:62:7c:6a:c9:32:41:7e:
        53:4e:e4:8c:af:4a:e3:14:77:b3:b7:d4:0e:17:1e:f6:13:b1:
        f0:9c:af:6e:38:3c:cc:24:79:3e:01:4b:3f:d2:12:f2:1c:f5:
        75:c6:6c:f3
vEdge# clear reverse-proxy context
vEdge# show reverse-proxy certificate
vEdge#
```

Related Topics

show certificate reverse-proxy, on page 210
show control connections, on page 227

clear system statistics

Clear system-wide forwarding statistics.

clear system statistics

Command History

Release	Modification
14.1	Command introduced.

Examples

```
vEdge# show system statistics
                        rx_pkts:         13330516
                       rx_drops:              322
                         ip_fwd:         18810968
                     ip_fwd_arp:               10
                ip_fwd_to_egress:          9597667
                ip_fwd_null_nhop:              109
                   ip_fwd_to_cpu:          2134168
                ip_fwd_rx_ipsec:          7149794
                        rx_bcast:               29
                        rx_mcast:           118251
           rx_mcast_link_local:           118251
         rx_implicit_acl_drops:            41570
                rx_ipsec_decap:          7148928
           rx_spi_ipsec_drops:              854
              rx_replay_drops:               12
              rx_non_ip_drops:          1731850
         bfd_tx_record_changed:            13924
       rx_arp_rate_limit_drops:               43
        rx_arp_non_local_drops:            17226
                  rx_arp_reqs:           176215
               rx_arp_replies:            23142
                 arp_add_fail:              311
                        tx_pkts:         24625271
                    tx_bcast:               85
                    tx_mcast:           118187
               ip_disabled_tx:                3
           tx_fragment_needed:             2918
            fragment_df_drops:              279
                 tx_fragments:             5278
```

```
                    tx_ipsec_pkts:          7560752
                   tx_ipsec_encap:          7560752
                tx_pre_ipsec_pkts:          7558392
               tx_pre_ipsec_encap:          7558392
                   tx_arp_replies:           176217
                      tx_arp_reqs:            23163
                   tx_no_arp_drop:                1
                      bfd_tx_pkts:          7510883
                      bfd_rx_pkts:          7119130
                    bfd_rec_down:               18
                    rx_pkt_qos_0:          2148610
                    rx_pkt_qos_1:           157403
                    rx_pkt_qos_2:         16623962
                    rx_pkt_qos_4:               10
                    rx_pkt_qos_7:          9251604
            icmp_rx.echo_requests:               15
             icmp_rx.echo_replies:           257071
             icmp_rx.host_unreach:               13
             icmp_rx.port_unreach:               58
        icmp_rx.dst_unreach_other:               11
        icmp_rx.fragment_required:               28
              icmp_rx.ttl_expired:                9
            icmp_tx.echo_requests:           257764
             icmp_tx.echo_replies:                2
          icmp_tx.network_unreach:               28
             icmp_tx.port_unreach:              137
        icmp_tx.fragment_required:              279

vEdge# clear system statistics

vEdge# show system statistics
                          rx_pkts:               67
                           ip_fwd:               90
                  ip_fwd_to_egress:               44
                     ip_fwd_to_cpu:               17
                   ip_fwd_rx_ipsec:               30
                           rx_mcast:                1
                 rx_mcast_link_local:               1
                      rx_ipsec_decap:               30
                  rx_non_ip_drops:                6
                   rx_arp_replies:                1
                          tx_pkts:              106
                    tx_ipsec_pkts:               31
                   tx_ipsec_encap:               31
                tx_pre_ipsec_pkts:               31
               tx_pre_ipsec_encap:               31
                      tx_arp_reqs:                1
                      bfd_tx_pkts:               31
                      bfd_rx_pkts:               30
                    rx_pkt_qos_0:               14
                    rx_pkt_qos_1:                2
                    rx_pkt_qos_2:               67
                    rx_pkt_qos_7:               46
             icmp_rx.echo_replies:                1
            icmp_tx.echo_requests:                1
```

Related Topics

show system statistics, on page 454

clear tunnel statistics

Zero the information about the packets transmitted and received on the IPsec connections that originate on the local router (on vEdge routers only).

clear tunnel statistics

Command History

Release	Modification
14.1	Command introduced.

Examples

```
vEdge# clear tunnel statistics

vEdge# show tunnel statistics
Tunnel[986]: Tunnel Type IPSec 10.0.0.8->75.21.94.46
                         rx_pkts:                2
                       rx_octets:              284
                         tx_pkts:                4
                       tx_octets:              388
Tunnel[986] BFD Record Index 1740:
                         tx_pkts:                2
                         rx_pkts:                2
                     Tx Err Code:             None
                     Rx Err Code:             None
Tunnel[1697]: Tunnel Type IPSec 10.0.0.8->25.6.101.120
                         rx_pkts:                2
                       rx_octets:              284
                         tx_pkts:                4
                       tx_octets:              388
Tunnel[1697] BFD Record Index 1717:
                         tx_pkts:                2
                         rx_pkts:                2
                     Tx Err Code:             None
                     Rx Err Code:             None
...
```

Related Topics

show tunnel statistics, on page 472

clear wlan radius-stats

Clear the statistics about the sessions with RADIUS servers being used for WLAN authentication (on vEdge routers only).

clear wlan radius-stats [**vap** *number*]

Syntax Description

vap *number*	VAP Interface: Virtual access point instance. Range: 0 through 3.

Command History

Release	Modification
17.1	Command introduced.

Related Topics

show interface, on page 265
show wlan clients, on page 477
show wlan interfaces, on page 478
show wlan radios, on page 479
show wlan radius, on page 481

clock

Set the time and date on the device. If you have configured NTP on the device, the NTP time overwrites the time and date that you set with the **clock** command.

clock set date *ccyy-mm-dd*

clock set time *hh*:*mm*:*ss.sss*

Syntax Description

ccyy-mm-dd	Date: Set the date by specifying four-digit year, two-digit month, and two-digit day. The year can be from 2000 to 2060.
hh:*mm*:*ss.sss*	Time: Set the time by two-digit hour (using a 24-hour clock), two-digit minute, two-digit seconds, and an optional three-digit hundredths of seconds.

Note You must set the time and date in a single command, but the order in which you specify them does not matter.

Command History

Release	Modification
14.1	Command introduced.

Examples

```
vEdge# clock set time 14:30:00 date 2013-11-25
vEdge# show uptime
14:30:03 up 13:51, 1 user, load average: 0.00, 0.01, 0.05
```

Related Topics

ntp
show uptime, on page 474

commit

Confirm or cancel a pending commit operation. You issue this **commit** command from operational mode. You establish a pending commit operation by using the **commit confirmed** configuration session management command.

commit (**abort** | **confirm**) [**persist-id** *id*]

Syntax Description

confirm	Confirm a Pending Commit Operation: Confirm a pending commit operation that was issued with the **commit confirmed** configuration command. You must confirm the commit operation with the time specified with the **commit confirmed** command; otherwise, the commit is canceled.
abort	Halt a Pending Commit Operation: Halt a pending commit operation that was issued with the **commit confirmed** command. This is the default operation for a pending commit operation. The commit is also canceled if the CLI session is terminated before you issue a **commit confirm** command.
persist-id *id*	Token to Identify the Pending Commit Operation: If you specified a token, *id*, when you initiated the pending commit operation, specify that token to either cancel or confirm the commit.

Command History

Release	Modification
14.1	Command introduced.

Examples

```
vEdge# commit confirm
Commit complete. Configuration is now permanent.
```

Related Topics

commit
show configuration commit list, on page 222

complete-on-space

Have the CLI automatically complete a command name when you type an unambiguous string and then press the space bar, or have the CLI list all possible completions when you type an ambiguous string and then press the space bar.

complete-on-space (**false** | **true**)

Syntax Description

false	Do Not Perform Command Completion: Do not have the CLI perform command completion when you press the space bar. This is the default setting.
true	Perform Command Completion: Have the CLI perform command completion when you press the space bar.

Command History

Release	Modification
14.1	Command introduced.
14.2	Default changed from **true** to **false** in Release 14.2.

Examples

```
vEdge# complete-on-space false
vEdge# hel
----------^
syntax error: expecting
vEdge# complete-on-space true
vEdge# help
```

Related Topics

show cli, on page 217

config

Enter configuration mode for vEdge devices. In configuration mode, you are editing a copy of the running configuration, called the candidate configuration, not the actual running configuration. Your changes take effect only when you issue a **commit** command.

Note Cisco IOS XE routers such as aggregation and integrated services routers should use the command **config-transaction** to enter configuration mode. The **config terminal** command is not supported on SD-WAN routers.

config (**exclusive** | **no-confirm** | **shared** | **terminal**)

Syntax Description

(none)	Edit a private copy of the running configuration. This private copy is not locked, so another user could also edit it at the same time.
terminal	Allow Editing from This Terminal Only: Edit a private copy of the running configuration. This private copy is not locked, so another user could also edit it at the same time.
no-confirm	Do Not Allow a Commit Confirmation: Edit a private copy of the running configuration and do not allow the **commit confirmed** command to be used to commit the configuration.
exclusive	Exclusive Edit: Lock the running configuration and the candidate configuration, and edit the candidate configuration. No one else can edit the candidate configuration as long as it is locked.
shared	Shared Edit: Edit the candidate configuration without locking it. This option allows another person to edit the candidate configuration at the same time.

Command History

Release	Modification
14.1	Command introduced.

Examples

```
vEdge# config
Entering configuration mode terminal
vEdge(config)#
```

Related Topics

file list, on page 79
load

debug

Enable and disable debugging mode for all or selected software function. Debug output is placed in the /var/log/tmplog/vdebug file on the local device.

[**no**] **debug all**

[**no**] **debug aaa login** (**radius** | **tacacs**)

[**no**] **debug bgp** (**all** | **events** | **fsm** | **ipcs** | **packets**) **vpn** *vpn-id*

[**no**] **debug cflowd** (**cli** | **events** | **ipc** | **misc** | **pkt_tx**) [**level** (**high** | **low**)]

[**no**] **debug chmgr all**

[**no**] **debug cloudexpress** (**events** | **ftm** | **omp** | **rtm** | **ttm**) [**level** (**high** | **low**)]

[**no**] **debug confd** (**developer-log** [**level** (**high** | **low**)] | **snmp**)

[**no**] **debug config-mgr** (**events** | **pppoe** | **ra**) [**level** (**high** | **low**)]

[**no**] **debug dbgd** (**events**)

[**no**] **debug dhcp-client** (**all** | **events** | **packets**)

[**no**] **debug dhcp-helper** (**all** | **events** | **packets**)

[**no**] **debug fpm** (**all** | **config** | **dpi** | **policy** | **ttm**)

[**no**] **debug ftm all**

[**no**] **debug igmp** (**config** | **events** | **fsm** | **ipc** | **packets**) [**level** (**high** | **low**)]

[**no**] **debug iked** (**all** | **confd** | **error** | **events** | **misc**) [**level** (**high** | **low**)]

[**no**] **debug netconf traces**

[**no**] **debug omp** (**all** | **events** | **ipcs** | **packets**)

[**no**] **debug ospf** (**all** | **events** | **ipcs** | **ism** | **lsa** | **nsm** | **nssa** | **packets**) **vpn** *vpn-id*

[**no**] **debug pim** (**auto-rp** | **events** | **fsm** | **ipcs** | **packets**) [**level** (**high** | **low**)] **vpn** *vpn-id*

[**no**] **debug platform software sdwan tracker**

[**no**] **debug resolver events** [**level** (**high** | **low**)]

[**no**] **debug rtm** (**events** | **ipc** | **next-hop** | **packets** | **rib**) **vpn** *vpn-id*

[**no**] **debug snmp events** [**level** (**high** | **low**)]

[**no**] **debug sysmgr all**

[**no**] **debug transport events** [**level** (**high** | **low**)]

[**no**] **debug tcpd** [**level** (**high** | **low**)]

[**no**] **debug ttm events**

[**no**] **debug vrrp** (**all** | **events** | **packets**) **vpn** *vpn-id*

Syntax Description

[**no**] **debug all**	All: Control debugging for all software functions that can be debugged.
[**no**] **debug aaa login** (**radius** | **tacacs**)	AAA Login via RADIUS or TACACS: Control debugging for login attempts using RADIUS or TACACS.

[**no**] **debug bgp** (**all** | **events** | **fsm** | **ipcs** | **packets**) **vpn** *vpn-id*	BGP: Control debugging for BGP: • **all**—Control the debugging of all BGP events, finite-state machine transitions, interprocess communications, and packets. • **events**—Control the debugging of BGP events, including damping events, finite-state machine events and transitions, keepalive message events, next-hop events, and routing table update events. • **fsm**—Control the debugging of BGP finite-state machine transitions. • **ipcs**—Control the debugging of all BGP interprocess communications. • **packets**—Control the debugging of all BGP protocol packets. • **vpn** *vpn-id*—Specify the VPN in which to perform debugging.
[**no**] **debug cflowd** (**cli** | **events** | **ipc** | **misc** | **pkt_tx**) [**level** (**high** | **low**)]	Cflowd Traffic Flow Monitoring: Control debugging for cflowd: • **cli** —Control the debugging of messages that are logged as the result of a configuration change made either directly on the vEdge router or because the changes have been pushed from the vSmart controller to the router. • **events** —Control the debugging of events to which the cflowd process (daemon) responds, including when the process connects with a collector or loses connectivity with it, and when the source-interface as configured in the vSmart template is removed. • **ipc** —Control the debugging of all cflowd interprocess communications. • **level** (**high** | **low**)—Set the detail of the comments logged by the debugging operation. The default level, **low**, provides comments sufficient to help you understand the actions that are occurring. The level **high** provides greater detail for the live debugging that might typically be performed by the Cisco SD-WAN engineering team. • **misc** —Control the debugging of miscellaneous cflowd events. • **pkt_tx** —Control the debugging of cflowd packet transmissions.
[**no**] **debug chmgr all**	Chassis Manager: Control debugging for the chassis manager.

[**no**] **debug cloudexpress** (**events** | **ftm** | **omp** | **rtm** | **ttm**) [**level** (**high** | **low**)]	Cloud OnRamp for SaaS: Control debugging for Cloud OnRamp for SaaS (formerly CloudExpress service). • **events**—Control the debugging of events to which the Cloud OnRamp for SaaS process (daemon) responds, including when the process connects with a collector or loses connectivity with it, and when the source-interface as configured in the vSmart template is removed. • **ftm**—Control debugging of the communication between Cloud OnRamp for SaaS and the forwarding table manager. • **level** (**high** | **low**)—Set the detail of the comments logged by the debugging operation. The default level, **low**, provides comments sufficient to help you understand the actions that are occurring. The level **high** provides greater detail for the live debugging that might typically be performed by the Cisco SD-WAN engineering team. • **omp**—Control the debugging of all Cloud OnRamp for SaaS OMP operations. • **rtm**—Control the debugging of communication between the Cloud OnRamp for SaaS and the route table manager. • **ttm**—Control the debugging of communication between the Cloud OnRamp for SaaS and the tunnel table manager.
[**no**] **debug config-mgr** (**events** | **pppoe** | **ra**) [**level** (**high** | **low**)]	Configuration Manager: Control debugging for the configuration manager. • **events**—Control the debugging of events to which the configuration manager process (daemon) responds, including when the process connects with a collector or loses connectivity with it, and when the source-interface as configured in the vSmart template is removed. • **level** (**high** | **low**)—Set the detail of the comments logged by the debugging operation. The default level, **low**, provides comments sufficient to help you understand the actions that are occurring. The level **high** provides greater detail for the live debugging that might typically be performed by the Cisco engineering team. • **pppoe**—Control the debugging of all Cloud OnRamp for SaaS OMP operations. • **ra**—Control the debugging of route advertisements to which the configuration manager responds.
[**no**]**debug dbgd events**	Debugger Process: Control debugging for the debugger process itself. • **events**—Control the debugging of events to which the debugger process (daemon) responds.

[**no**] **debug dhcp-client** (**all** | **events** | **packets**)	DHCP Client: Control the debugging of Dynamic Host Configuration Protocol (DHCP) client activities. • **all**—Control the debugging of all DHCP client events and packets. • **events**—Control the debugging of DHCP client protocol events. • **packets**—Control the debugging of all DHCP client packets.
[**no**] **debug dhcp-helper** (**all** | **events** | **packets**)	DHCP Helper: Control the debugging of Dynamic Host Configuration Protocol (DHCP) helper activities. • **all**—Control the debugging of all DHCP helper events and packets. • **events**—Control the debugging of DHCP helper protocol events. • **packets**—Control the debugging of all DHCP helper packets.
[**no**] **debug fpm** (**all** | **config** | **dpi** | **policy** | **ttm**)	Forwarding Policy Manager: Control debugging for the forwarding policy manager: • **all**—Control the debugging of events related to the forwarding policy manager, including configuration changes, application-aware routing events, and communication with the tunnel table manager. • **config**—Control the debugging of messages that are logged as a result of a policy configuration change made either directly on the vEdge router or because the changes have been pushed from the vSmart controller to the router. • **dpi**—Control the debugging of all application-aware routing (deep packet inspection) events. • **policy**—Control the debugging of messages that are logged as the result of policy programming events. • **ttm**—Control the debugging of communication between the forwarding policy manager and the tunnel table manager.
[**no**] **debug ftm all**	Forwarding Table Manager: Control debugging for the forwarding table manager operations.
[**no**] **debug igmp** (**config** | **events** | **fsm** | **ipc** | **packets**) [**level** (**high** | **low**)]	IGMP: Control debugging for IGMP. • **events**—Control the debugging of IGMP events, including finite-state machine events and transitions, keepalive message events, next-hop events, and routing table update events. • **fsm**—Control the debugging of IGMP finite-state machine transitions. • **ipcs**—Control the debugging of all IGMP interprocess communications. • **packets**—Control the debugging of all IGMP protocol packets.

[**no**] **debug iked** (**all** | **confd** | **error** | **events** | **misc**) [**level** (**high** | **low**)]	IKE: Control debugging for the forwarding policy manager. • **all**—Control the debugging of all events related to IKE. • **confd**—Control the debugging of Netconf activity to log all IKE-related Netconf configuration messages between the local device and the vManage NMS. • **error**—Control the debugging of IKE errors. • **events**—Control the debugging of IKE protocol events. • **level** (**high** | **low**)—Set the detail of the comments logged by the debugging operation. The default level, **low**, provides comments sufficient to help you understand the actions that are occurring. The level **high** provides greater detail for the live debugging that might typically be performed by the Cisco SD-WAN engineering team. • **misc**—Control the debugging of miscellaneous IKE events.
[**no**] **debug netconf traces**	Netconf: Enable and disable Netconf activity to log all Netconf configuration messages between the local device and the vManage NMS. Netconf debug messages are logged to the /var/log/confd/netconf.trace file.
[**no**] **debug omp** (**all** | **events** | **ipcs** | **packets**)	OMP: Control the debugging of OMP. • **all**—Control the debugging of all OMP events, interprocess communications, and packets. • **events**—Control the debugging of OMP events. • **ipcs**—Control the debugging of all OMP interprocess communications. • **packets**—Control the debugging of all OMP protocol packets.
[**no**] **debug ospf** (**all** | **events** | **ipcs** | **ism** | **lsa** | **nsm** | **nssa** | **packets**) **vpn** *vpn-id*	OSPF: Control the debugging of OSPF. • **all**—Control the debugging of all OSPF functions. • **events**—Control the debugging of OSPF events, including adjacencies, flooding information, designated router selection, and shortest path first (SPF) calculations. • **ipcs**—Control the debugging of all OSPF interprocess communications. • **ism**—Control the debugging of OSPF interface state machine transitions. • **nsm**—Control the debugging of OSPF network tate machine transitions. • **lsa**—Control the debugging of OSPF LSA messages. • **nssa**—Control the debugging of OSPF NSSA messages. • **packets**—Control the debugging of all OSPF protocol packets.

[**no**] **debug pim** (**auto-rp** | **events** | **fsm** | **ipcs** | **packets**) [**level** (**high** | **low**)] **vpn** *vpn-id*	PIM: Control debugging for PIM. • **all**—Control the debugging of all PIM events, finite-state machine transitions, interprocess communications, and packets. • **events**—Control the debugging of PIM events, including finite-state machine events and transitions, keepalive message events, next-hop events, and routing table update events. • **fsm**—Control the debugging of PIM finite-state machine transitions. • **ipcs**—Control the debugging of all PIM interprocess communications. • **packets**—Control the debugging of all PIMP protocol packets. • **vpn** *vpn-id*—Specify the VPN in which to perform debugging.
[**no**] **debug platform software sdwan tracker**	Service chaining: (Cisco IOS XE Catalyst SD-WAN devices) Display the service log for the tracker, which probes service devices periodically to test whether the devices are reachable.
[**no**] **debug resolver events** [**level** (**high** | **low**)]	Resolver: Control debugging for all resolver process events. The resolver process handles a plethora of tasks, including tracking ARP, MAC addresses, DNS, and connected interfaces. • **level** (**high** | **low**)—Set the detail of the comments logged by the debugging operation. The default level, **low**, provides comments sufficient to help you understand the actions that are occurring. The level **high** provides greater detail for the live debugging that might typically be performed by the Cisco SD-WAN engineering team.
[**no**] **debug rtm** (**events** | **ipc** | **next-hop** | **packets** | **rib**) **vpn** *vpn-id*	Route Table Manager: Control debugging for the route table manager. • **events**—Control the debugging of route table manager events. • **ipc**—Control the debugging of all route table manager interprocess communications. • **next-hop**—Control the debugging of the route table manager handling of next hops. • **packets**—Control the debugging of the route table manager handling of route exchange packets. • **rib**—Control the debugging of route table manager communication with the route table. • **vpn** *vpn-id*—Specify the VPN in which to perform debugging.
[**no**] **debug snmp events** [**level** (**high** | **low**)]	SNMP: Control debugging for all SNMP events. • **level** (**high** | **low**)—Set the detail of the comments logged by the debugging operation. The default level, **low**, provides comments sufficient to help you understand the actions that are occurring. The level **high** provides greater detail for the live debugging that might typically be performed by the Cisco SD-WAN engineering team.

[**no**] **debug sysmgr all**	System Manager: Control debugging for the system manager.
[**no**] **debug tcpd** [**level** (**high** | **low**)]	TCP Optimization Process: Control debugging for TCP optimization. • **level** (**high** | **low**)—Set the detail of the comments logged by the debugging operation. The default level, **low**, provides comments sufficient to help you understand the actions that are occurring. The level **high** provides greater detail for the live debugging that might typically be performed by the Cisco SD-WAN engineering team.
[**no**] **debug transport events** [**level** (**high** | **low**)]	Transport Process: Control debugging for all vtracker transport process events. The vtracker process pings the vBond orchestrator every second. • **level** (**high** | **low**)—Set the detail of the comments logged by the debugging operation. The default level, **low**, provides comments sufficient to help you understand the actions that are occurring. The level **high** provides greater detail for the live debugging that might typically be performed by the Cisco SD-WAN engineering team.
[**no**] **debug ttm events**	Tunnel Table Manager: Control debugging for all tunnel table manager events.
[**no**] **debug vrrp** (**all** | **events** | **packets**) **vpn** *vpn-id*	VRRP: Control debugging for the Virtual Router Redundancy Protocol (VRRP). • **all**—Control the debugging of all VRRP events and packets. • **events**—Control the debugging of VRRP events. • **packets**—Control the debugging of VRRP packets.

Command History

Release	Modification
14.1	Command introduced.
16.3	Starting with Release 16.3, output is placed in the /var/log/tmplog/vdebug file, not the /var/log/vdebug file.
Cisco IOS XE Catalyst SD-WAN Release 17.3.1a	Added **debug platform software sdwan tracker**.

debug packet-trace condition

To enable packet tracing on Cisco vEdge devices, use the **debug packet-trace condition** command in privileged EXEC mode.

debug packet-trace condition [**start** | **stop**] [**bidirectional**] [**circular**] [**destination-ip** *ip-address*] [**global-stat**] [**ingress-if** *interface*] [**logging**] [**source-ip** *ip-address*] [**vpn-id** *vpn-id*]

Syntax Description

bidirectional	(Optional) Enables bidirectional flow debug for source IP and destination IP.
circular	(Optional) Enables circular packet tracing. In this mode, the 1024 packets in the buffer are continuously over-written.
clear	(Optional) Clears all debug configurations and packet tracer memory.
destination-ip	(Optional) Specifies destination IPv4 address.
global-stat	(Optional) Specifies the match on select global statistic counter name.
ingress-if	(Optional) Specifies ingress interface name. Note: It is must to choose VPN to configure the interface.
logging	(Optional) Enables packet tracer debug logging.
source-ip	(Optional) Specifies source IP address.
start	(Optional) Starts conditional debugging.
stop	(Optional) Stops conditional debugging.
vpn-id	(Optional) Enables packet tracing for the specified VPN.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco SD-WAN Release 20.5.1	This command was introduced.
Cisco SD-WAN Release 20.8.1	A new keyword **global-stat** is added.

Usage Guidelines

The parameters after the keywords **start** and **stop** in the command syntax can be configured in any order.

Example

The following example shows how to configure conditions for packet tracing:

```
Device# debug packet-trace condition source-ip 10.1.1.1
Device# debug packet-trace condition vpn-id 0
Device# debug packet-trace condition interface ge0/1
Device# debug packet-trace condition stop
```

debug platform condition mpls match-inner

To match IPv4 or IPv6 traffic over an MPLS network on Cisco vEdge devices, use the **debug platform condition mpls match-inner** command in privileged EXEC mode.

debug platform condition [interface { *interface-name interface-number* } **]**

mpls *depth-of-mpls-label* **match-inner {ipv4 | ipv6}** { *ipv4-source-prefix* | *any* | *host* | *payload-offset* | *protocol* } { *ipv4-destination-prefix* | *any* | *host* } { **application** | **both** | **ingress** | **egress** } [**bidirection**] [**allow-no-label**]

no debug platform condition [interface { *interface-name interface-number* } **]**
mpls *depth-of-mpls-label* **match-inner {ipv4 | ipv6}** { *ipv4-source-prefix* | *any* | *host* | *payload-offset* | *protocol* } { *ipv4-destination-prefix* | *any* | *host* } { **application** | **both** | **ingress** | **egress** } [**bidirection**] [**allow-no-label**]

Syntax Description

debug	Debug device operations, generated or received traffic, and any error messages.
platform	Debug specific network platforms based on your requirement.
condition	Specify conditions to debug based on your requirement.
interface	(Optional) Debug a specific interface of your choice.
interface-name	Specify the the interface name.
interface-number	Specify the interface number.
mpls	Debug the MPLS network.
source prefix	Specifies IPv4 or IPv6 source prefix.
application	Debug Application conditions.
both	Debug ingress and egress debug simultaneously.
egress	Debug egress only.
ingress	Debug ingress only.
match-inner	Debug inline ACL filters for overlay packet over MPLS.
ipv4	Debug IPv4 conditions .
ipv6	Debug IPv6 conditions.
destination prefix	Specifies IPv4 or IPv6 destination prefix.
any	Specifies any source prefix.
payload-offset	Configures the ineer payload offset to locate the overlap IPv4 and IPv6 header.
host	Specifies a single destination host.
bidirection	(Optional) Allows to fileter packets in bidirection.
allow-no-label	(Optional) Allows to filter packets without MPLS labels.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.11.1a	A new command **debug platform condition mpls** is added.

Example

The following example shows how to configure conditions for packet tracing:

```
Device# debug platform condition mpls match-inner ipv4
Device# debug platform condition mpls match-inner ipv4 any any
Device# debug platform condition mpls match-inner ipv4 any any both
Device# debug platform condition mpls match-inner ipv4 any any both
Device# debug platform condition mpls match-inner ipv4 any any both allow-no-label
```

debug-vdaemon

Enable and disable debugging mode for vdaemon software function. Debug output is placed in the /var/log/tmplog/vdebug file on the local device.

debug vdaemon { **all** | **confd** | **error** | **events** | **hello** | **misc** | **packets** } [**high** | **low**]
no debug vdaemon { **all** | **confd** | **error** | **events** | **hello** | **misc** | **packets** } [**high** | **low**]

Syntax Description

{**all** | **confd** | **error** | **events** | **hello** | **misc** | **packets**} {**high** | **low**}	vDaemon Process: Control debugging for vDaemon, the Cisco SD-WAN software process: • **all**: Control the debugging of all vdaemon process functions. • **confd**: Control the debugging of vdaemon process CLI functions. • **error**: Control the debugging error of vdaemon actions. • **events**: Control the debugging of vdaemon process events. • **hello**: Control the debugging of vdaemon hello packets. • **misc**: Control the debugging of miscellaneous vdaemon process events. • **packets**: Control the debugging of all vdaemon process packets. • **high**: Displays verbose logging. • **low**: Displays minimal logging.

Command History

Release	Modification
14.1	Command introduced.

Release	Modification
16.3	Starting with Release 16.3, output is placed in the /var/log/tmplog/vdebug file, not the /var/log/vdebug file.
Cisco SD-WAN Release 20.5.1	Added **hello** keyword for **debug vdaemon** command.

debug vdaemon peer

Enable and disable debugging mode for vdaemon software function. Debug output is placed in the /var/log/tmplog/vdebug file on the local device.

debug vdaemon peer public-ip *ip-address* **public-port** *port-address* **facility** { **all** | **confd** | **error** | **events** | **hello** | **misc** | **packet** } **level** { **high** | **low** }
no debug vdaemon peer public-ip *ip-address* **public-port** *port-address* **facility** { **all** | **confd** | **error** | **events** | **hello** | **misc** | **packet** } **level** { **high** | **low** }

Syntax Description

public-ip *ip-address*	Speicifes peer public ip address.
public-port *port-address*	Specifies peer public port address. Range: 0 to 65535
facility{**all** | **confd** | **error** | **events** | **hello** | **misc** | **packet**}	Facility: Control debugging of miscellaneous vdaemon actions: • **all**: Control the debugging of all vdaemon process functions. • **confd**: Control the debugging of vdaemon process CLI functions. • **error**: Control the debugging error of vdaemon actions. • **events**: Control the debugging of vdaemon process events. • **hello**: Control the debugging of vdaemon hello packets. • **misc**: Control the debugging of miscellaneous vdaemon process events. • **packet**: Control the debugging of all vdaemon process packets.
level{**high** | **low**}	Set the detail of the comments logged by the debugging operation. The default level, **low**, provides comments sufficient to help you understand the actions that are occurring. The level **high** provides greater detail for the live debugging that might typically be performed by the Cisco engineering team.

Command History

Release	Modification
Cisco SD-WAN Release 20.5.1	This command was introduced.

Examples

The following is a sample output for **debug vdaemon peer** command. Verbose logs for a particular peer can be enabled, and hello log is displayed:

```
Device# debug vdaemon peer public-ip 10.0.12.22 public-port 23456 facility all level high

IP addr: 10.0.12.22 | Port: 23456 | Peer exist: true |  misc:high  events:high  confd:high
  pkt:high  hello:high  error:high

Mar 10 11:32:56 vm6 VDAEMON[1592]: vbond_proc_msg[4957]: %VDAEMON_DBG_HELLO-3: peer publoc:
 10.0.12.22:23456
Received a Hello from .. 10.0.12.22:23456 on loopback2 (my count 2 hello_vsmart_count 0)
(my count 1 hello_vmanage_count 1)
Mar 10 11:32:56 vm6 VDAEMON[1592]: vdaemon_vm_rebalance_needed[805]: %VDAEMON_DBG_ERROR-3:
 peer publoc: 10.0.12.22:23456
Peer vmanage sys-ip 172.16.255.22 is the chosen one
```

exit

Exit from the CLI session. The **exit** and **quit** commands do the same thing.

exit

Command History

Release	Modification
14.1	Command introduced.

Examples

```
vEdge# exit
My-MacBook-Pro:~ me$
```

Related Topics

quit, on page 94
vshell, on page 503

file list

List the files in a directory on the Cisco SD-WAN device.

file list *directory*

Syntax Description

directory	Name of a Directory: List the files in the specified directory on the Cisco SD-WAN device.

Examples

```
vEdge# file list /var
backups
confd
crash
lib
```

```
local
lock
log
run
spool
tmp
volatile
```

Command History

Release	Modification
14.1	Command introduced.

Related Topics

file show, on page 80
save

file show

Display the contents of a file on the Cisco SD-WAN device.

file show *filename*

Syntax Description

filename	Name of a Directory: Name of a file on the Cisco SD-WAN device.

Command History

Release	Modification
14.1	Command introduced.

Examples

```
vEdge# file list
x.csr
vEdge# file show x.csr
-----BEGIN CERTIFICATE REQUEST-----
MIIDOzCCAiMCAQAwgboxCzAJBgNVBAYTAlVTMRMwEQYDVQQIEwpDYWxpZm9ybmlh
MREwDwYDVQQHEwhTYW4gSm9zZTEOMAwGA1UECxMFYXZpdmExFDASBgNVBAoTC3ZJ
UHRlbGEgSW5jMTkwNwYDVQQDFDBWU21hcnRfMDdfMDFfMjAxNF8yM18yM181Ml80
MDc2Mzg1NzcudmlwdGVsYS5jb20xIjAgBgkqhkiG9w0BCQEWE3N1cHBvcnRAdmlw
dGVsYS5jb20wggEiMA0GCSqGSIb3DQEBAQUAA4IBDwAwggEKAoIBAQC2ebu1o5FJ
419xtFhQOf0E7OjDzRvDvC9IUcOPayMMnJgN54EXi3ReVNjsQCn3+P8nPa9hQFjD
3wI03vMVqw4DCVsNmv/lhVsK0PpiV2ALThu4sWtLUPhOJcBOjW8sRcgYP6FKeWaH
Bolx4e+V5vIP52pbTzyIIF/ISdQqKaoMTDcugvKUkrP/xTKpQvvNrOz7eyJUbc8B
IrHyAirm32gFZc8kPeOM6QZTRtVWn4u0cjU9i/DYzByu5HpJqRucrFG5YiM/Ev9p
f8nalbT1Nrmh7RTkTyE276g+nLl8IyTIIrQlbG58bxX0x2inoJP12zV828Fm2AuA
KEEKXzN/bBTfAgMBAAGgOzA5BgkqhkiG9w0BCQ4xLDAqMAkGA1UdEwQCMAAwHQYD
VR0OBBYEFNcvAamf8WANRkKbFjBo3Hwi83BxMA0GCSqGSIb3DQEBBQUAA4IBAQA9
/0fCrER0il0JSqjeOVUppILAmApkWbUaEegdR2s8wzCJDNrV8P6ZPpu98xv3LblY
```

```
9tiI8ShZPGHPU0ypnLnvGvzhMUmOaL5VRQeXSwvRSVaxN2fBaFKHXclTZbCIF/p8
fPasc7n84/uOsQU/+PaIFwFDUv4GKMiPNLT5HKpHIQM1j4PwYcNgKL+gU6lfe1y2
Wi80ZrwqYRZ5jxVZSTc6qnEA6i1DvxgdDirF5o5Hgt8pHB5JWcBBNrT+/jiBiiyT
rjN2VSOzx5WiIDvdfZcfO8ajXItvhcuuNxBTQEHTfd7p8G1fDGKdtrKybvxKxv/u
fVZLIZN2tDkqsdbZMT9+
-----END CERTIFICATE REQUEST-----
```

Related Topics

file list, on page 79

help

Display help information about a CLI command.

help

Command History

Release	Modification
14.1	Command introduced.

Examples

```
vEdge# help ping
Help for command: ping
    Verify IP (ICMP) connectivity to a host
```

Related Topics

show parser dump, on page 393

history

Set the number of history items that the CLI tracks in operational mode.

show history *number*

Syntax Description

show history *number*	Number of History Items: Set the number of commands tracked by the CLI history. *number* can be a value from 0 through 1000. The default is 100 commands. To disable the history feature, set the number to 0.
no history	Return to Default Number of History Items: Restore the default history queue length of 100 commands.

Command History

Release	Modification
14.1	Command introduced.

Examples

```
vEdge# history 100
vEdge#
```

Related Topics

clear history, on page 34
show history, on page 260

idle-timeout

Set how long the CLI is inactive on a device before the user is logged out. If a user is connected to the device via an SSH connection, the SSH connection is closed after this time expires.

idle-timeout *seconds*

Syntax Description

idle-timeout *seconds*	Timeout Value: Number of seconds that the CLI is idle before the user is logged out of the CLI. A value of 0 (zero) sets the time to infinity, so the user is never logged out. Range: 0 through 8192 seconds. Default: 1800 seconds (30 minutes).

Command History

Release	Modification
14.1	Command introduced.

Examples

```
vEdge# idle-timeout 3600
```

Related Topics

exit, on page 79
idle-timeout
show cli, on page 217

job stop

Stop a job that is monitoring a file on the local device. This command is the same as the UNIX kill command.

job stop *job-number*

Syntax Description

job-number	Job Number: Number of the job to stop. This number is in the JOBS column in the **show jobs** command output.

Command History

Release	Modification
15.4	Command introduced.

Examples

Stop the job that is monitoring a file

```
vEdge# show jobs
JOB COMMAND
1   monitor start /var/log/vsyslog
vEdge# log:local7.notice: Dec 16 14:55:26 vsmart SYSMGR[219]: %Viptela-vsmart-SYSMGR-5-NTCE-200025: System clock set to Wed Dec 16 14:55:26 2015
(timezone 'America/Los_Angeles')
log:local7.notice: Dec 16 14:55:27 vsmart SYSMGR[219]: %Viptela-vsmart-SYSMGR-5-NTCE-200025: System clock set to Wed Dec 16 14:55:27 2015  (timezone
 'America/Los_Angeles')

vEdge# job stop 1
vEdge# show jobs
JOB COMMAND
vEdge#
```

Related Topics

monitor start, on page 85
monitor stop, on page 86
show jobs, on page 325

logout

Terminate the current CLI session, a specific CLI session, or the session of a specific user.

logout [**session** *session-number*] [**user** *username*]

Syntax Description

(none)	Terminate the current CLI session.
session *session-number*	Specific Session: Terminate a specific CLI session.
user *username*	Specific User: Terminate the CLI session of a specific user.

Command History

Release	Modification
14.1	Command introduced.

Examples

```
vEdge# logout session 16
vEdge#
Message from admin@vEdge at 2013-11-27 15:00:10...
Your session has been terminated by admin
EOF
```

Related Topics

exit, on page 79

monitor event-trace sdwan

To monitor and control the event trace function for a Cisco SD-WAN subsystem, use the **monitor event-trace** command in the privileged EXEC mode. Event trace provides the functionality to capture the SD-WAN traces between the viptela daemons and SD-WAN subsystems.

monitor event-trace *sdwan* { **clear** | **continuous** | **disable** | **dump** | **enable** | **one-shot** }

Syntax Description

sdwan	Name of the Cisco SD-WAN subsystem that is the subject of the event trace. To get a list of components that support event tracing, use the **monitor event-trace ?** command.
clear	Clears existing trace messages for the specified component from memory on the networking device.
continuous	Displays the latest event trace entries.
disable	Turns off event tracing for the specified component.
dump	The trace messages are saved in binary format.
enable	Enables event tracing for the specified component.
one-shot	Clears any existing trace information from memory, starts event tracing again, and disables the trace when the trace reaches the size specified.

Command Default

The event trace function is disabled by default.

Command Modes

Privileged EXEC

Global Configuration Mode

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1r	This command was introduced.

Usage Guidelines

The amount of data collected from the trace depends on the trace message size configured using the **monitor event-trace** command in global configuration mode for each instance of a trace.

Use the **show monitor event-trace** command to display trace messages.

Use the **monitor event-trace** *sdwan* **dump** command to save trace message information for a single event. By default, trace information is saved in binary format.

Examples

The following example shows the privileged EXEC commands to stop event tracing, clear the current contents of memory, and reenable the trace function for the component. This example assumes that the tracing function is configured and enabled on the networking device.

```
Router# monitor event-trace sdwan disable
Router# monitor event-trace sdwan clear
Router# monitor event-trace sdwan enable
```

The following example shows how the **monitor event-trace one-shot** command accomplishes the same function as the previous example except in one command. In this example, once the size of the trace message file has been exceeded, the trace is terminated.

```
Router# monitor event-trace sdwan one-shot
```

The following example shows the command for writing trace messages for an event in binary format. In this example, the trace messages for the SD-WAN component are written to a file.

```
Router# monitor event-trace sdwan dump
```

monitor start

Begin monitoring a file on the local device. When a file is monitored, any logging information is displayed on the console as it is added to the file.

monitor start *filename*

Syntax Description

filename	Filename To Monitor: Name of the file to monitor.

Command History

Release	Modification
15.4	Command introduced.

Examples

Start and stop monitoring a file, and view the files that are being monitored

```
vEdge# monitor start /var/log/vsyslog
vEdge# show jobs
JOB COMMAND
1   monitor start /var/log/vsyslog
vEdge# log:local7.notice: Dec 16 14:55:26 vsmart SYSMGR[219]: %Viptela-vsmart-SYSMGR-5-NTCE-200025: System clock set to Wed Dec 16 14:55:26 2015  (timezone 'America/Los_Angeles')

log:local7.notice: Dec 16 14:55:27 vsmart SYSMGR[219]: %Viptela-vsmart-SYSMGR-5-NTCE-200025: System clock set to Wed Dec 16 14:55:27 2015  (timezone 'America/Los_Angeles')

vEdge# monitor stop /var/log/vsyslog
vEdge#
```

Related Topics

job stop, on page 83
monitor stop, on page 86
show jobs, on page 325

monitor stop

Stop monitoring a file on the local device. When a file is monitored, any logging information is displayed on the console as it is added to the file.

monitor stop *filename*

Syntax Description

filename	File to Monitor: Name of the file to monitor.

Command History

Release	Modification
15.4	Command introduced.

Examples

Start and stop monitoring a file, and view the files that are being monitored

```
vEdge# monitor start /var/log/vsyslog
vEdge# show jobs
JOB COMMAND
1   monitor start /var/log/vsyslog
vEdge# log:local7.notice: Dec 16 14:55:26 vsmart SYSMGR[219]: %Viptela-vsmart-SYSMGR-5-NTCE-200025: System clock set to Wed Dec 16 14:55:26 2015  (timezone 'America/Los_Angeles')

log:local7.notice: Dec 16 14:55:27 vsmart SYSMGR[219]: %Viptela-vsmart-SYSMGR-5-NTCE-200025: System clock set to Wed Dec 16 14:55:27 2015  (timezone 'America/Los_Angeles')

vEdge# monitor stop /var/log/vsyslog
vEdge#
```

Related Topics

job stop, on page 83
monitor start, on page 85
show jobs, on page 325

nslookup

Perform a DNS lookup.

nslookup [**vpn-id** *vpn-id*] *dns-name*

Syntax Description

dns-name	DNS Name: Perform a DNS lookup to map a fully qualified domain name to one or more IP addresses. *dns-name* can be a hostname string, or an IPv4 or IPv6 address.
vpn-id *vpn-id*	VPN: Specify the VPN into which to send the ping packets. If you omit the VPN identifier, the default is VPN 0, which is the transport VPN.

Command History

Release	Modification
14.1	Command introduced.
16.3	In Release 16.3, added support for IPv6 addresses in VPN 0.

Examples

```
vEdge# nslookup vedge.dns.com
nslookup in vpn 0:
Server: 172.16.255.100
Address 1: 172.16.255.100 vedge.dns.com

Name:      vedge
Address 1: 172.16.255.100 vedge.dns.com

vEdge# nslookup vpn 0 fe80::20c:29ff:fe9b:a9bb
nslookup in VPN 0:
Server:    127.0.0.1
Address 1: 127.0.0.1 localhost.localdomain

Name:      fe80::20c:29ff:fe9b:a9bb
Address1:  fe80::20c:29ff:fe9b:a9bb
```

Related Topics

ping, on page 89
traceroute, on page 501

paginate

Control the pagination of command output.

paginate (**false** | **true**)

Syntax Description

false	Display Command Output Continuously: Display all command output continuously, regardless of the CLI screen height.
true	Paginate Command Output:Display all command output one screen at a time. To display the next screen of output, press the space bar. Pagination is the default setting.

Command History

Release	Modification
14.1	Command introduced.

Examples

```
vEdge# show running-config system
system
host-name vedge-1
system-ip 172.16.255.1
domain-id 1
site-id   1
clock timezone America/Los_Angeles
vbond 10.0.14.4
aaa
  auth-order local radius
  usergroup basic
   task system read write
   task interface read write
  !
  usergroup netadmin
  !
  usergroup operator
   task system read
   task interface read
   task policy read
   task routing read
   task security read
  !
  user admin
--More--
vEdge# paginate false
vEdge# show running-config system
usergroup basic
   task system read write
   task interface read write
  !
  usergroup netadmin
  !
  usergroup operator
   task system read
   task interface read
   task policy read
   task routing read
   task security read
  !
  user admin
   password $1$zvOh58pk$QLX7/RS/F0c6ar94.xl2k.
```

```
  !
!
logging
  disk
   enable
  !
 !
!
vEdge#
```

Related Topics

more
nomore
tab

ping

Verify that a network device is reachable on the network, by sending ICMP ECHO_REQUEST packets to them. This command is effectively identical to the standard UNIX **ping** command.

ping (*hostname* | *ip-address*)

ping vpn *vpn-id* (*hostname* | *ip-address*)

ping [**count** *number*] [**rapid**] [**size** *bytes*] [**source** (*interface-name* | *ip-address*)] [**wait** *seconds*] **vpn** *vpn-id* (*hostname* | *ip-address*)

Syntax Description

(*hostname* | *ip-address*)	Device to Ping: Name or IPv4 or IPv6 address of the host to ping. For an IPv4 address in a service VPN, you can ping the primary and the secondary addresses.
count *number*	Number of Ping Requests to Send: Number of ping requests to send. If you do not specify a count, the command operates until you interrupt it by typing Control-C.
rapid	Rapid Pinging: Send five ping requests in rapid succession and display abbreviated statistics, only for packets transmitted and received, and percentage of packets lost.
size *bytes*	Size of Ping Request Packets: Size of the packet to send. Default: 64 bytes (56 bytes of data plus 8 bytes of ICMP header).
source (*interface-name* | *ip-address*)	Source of Ping Packets: Interface or IP address from which to send to ping packets. You cannot specify the loopback0 interface in this option.
wait *seconds*	Time to Wait between Each Ping Packet: Time to wait for a response to a ping packet. Default: 1 second.
vpn *vpn-id*	VPN in which to Ping: Specify the VPN into which to send the ping packets.

Command History

Release	Modification
14.1	Command introduced.
16.3	Added support for IPv6 host addresses in VPN 0.
17.2.2	Added support for pinging secondary IPv4 addresses.

Examples

```
vEdge# ping vpn 0 10.0.14.4
PING 10.0.14.4 (10.0.14.4): 56 data bytes
64 bytes from 10.0.14.4: seq=0 ttl=63 time=0.642 ms
64 bytes from 10.0.14.4: seq=1 ttl=63 time=0.788 ms
64 bytes from 10.0.14.4: seq=2 ttl=63 time=0.685 ms
64 bytes from 10.0.14.4: seq=3 ttl=63 time=0.666 ms
64 bytes from 10.0.14.4: seq=4 ttl=63 time=0.713 ms
64 bytes from 10.0.14.4: seq=5 ttl=63 time=0.846 ms
^C
--- 10.0.14.4 ping statistics ---
6 packets transmitted, 6 packets received, 0% packet loss
round-trip min/avg/max = 0.642/0.723/0.846 ms
```

```
vEdge# ping vpn 0 rapid 10.0.12.2
Defaulting count to 5
!!!!!
--- 10.0.12.2 statistics ---
5 packets transmitted, 5 packets received, 0% packet loss
```

```
vEdge# ping vpn 0 10.0.12.3
PING 10.0.12.3 (10.0.12.3): 56 data bytes
64 bytes from 10.0.12.3: seq=0 ttl=64 time=8.127 ms
64 bytes from 10.0.12.3: seq=1 ttl=64 time=0.475 ms
64 bytes from 10.0.12.3: seq=2 ttl=64 time=0.336 ms
64 bytes from 10.0.12.3: seq=3 ttl=64 time=0.576 ms
64 bytes from 10.0.12.3: seq=4 ttl=64 time=0.578 ms
^C
--- 10.0.12.3 ping statistics ---
5 packets transmitted, 5 packets received, 0% packet loss
round-trip min/avg/max = 0.336/2.018/8.127 ms
```

```
vEdge# show interface
                                IF      IF                                                              TCP
                                ADMIN   OPER    ENCAP                                           SPEED   MSS                     RX       TX
VPN  INTERFACE  IP ADDRESS      STATUS  STATUS  TYPE   PORT TYPE  MTU   HWADDR                 MBPS    DUPLEX  ADJUST  UPTIME  PACKETS  PACKETS
-------------------------------------------------------------------------------------------------------------------------------------------
0    gre4       172.0.101.15/24 Up      Up      null   service    1500  0a:01:0f:0f:00:00      0       full    1420    0:00:06:09  0        0
0    ge0/0      10.1.15.15/24   Up      Up      null   transport  1500  00:0c:29:9c:a2:be      10      full    1420    0:00:26:44  9986     10696
0    ge0/1      10.1.17.15/24   Up      Up      null   service    1500  00:0c:29:9c:a2:c8      10      full    1420    0:00:17:13  3        8
0    ge0/2      -               Down    Up      null   service    1500  00:0c:29:9c:a2:d2      10      full    1420    0:00:26:47  3        0
0    ge0/3      10.0.20.15/24   Up      Up      null   service    1500  00:0c:29:9c:a2:dc      10      full    1420    0:00:17:13  11       9
0    ge0/6      57.0.1.15/24    Up      Up      null   service    1500  00:0c:29:9c:a2:fa      10      full    1420    0:00:17:13  3        9
0    ge0/7      10.0.100.15/24  Up      Up      null   service    1500  00:0c:29:9c:a2:04      10      full    1420    0:00:26:21  753      641
0    system     172.16.255.15/32 Up     Up      null   loopback   1500  00:00:00:00:00:00      10      full    1420    0:00:15:52  0        0
1    gre1       -               Up      Down    null   service    1500  38:00:01:0f:00:00      -       -       1420    -           0        0
1    ge0/4      10.20.24.15/24  Up      Up      null   service    1500  00:0c:29:9c:a2:e6      10      full    1420    0:00:17:10  714      717
1    ge0/5      56.0.1.15/24    Up      Up      null   service    1500  00:0c:29:9c:a2:f0      10      full    1420    0:00:17:10  1        47
1    loopback0  10.20.30.15/24  Up      Up      null   service    1500  00:00:00:00:00:00      10      full    1420    0:00:00:20  0        0
512  eth0       10.0.1.15/24    Up      Up      null   service    1500  00:50:56:00:01:0f      1000    full    0       0:00:26:39  8156     5313

vEdge# ping vpn 1 10.20.25.16 source 10.20.30.15
Ping in VPN 1
PING 10.20.25.16 (10.20.25.16) from 10.20.30.15 : 56(84) bytes of data.
64 bytes from 10.20.25.16: icmp_seq=1 ttl=64 time=1.45 ms
64 bytes from 10.20.25.16: icmp_seq=2 ttl=64 time=1.61 ms
^C
--- 10.20.25.16 ping statistics ---
```

```
2 packets transmitted, 2 received, 0% packet loss, time 1001ms
rtt min/avg/max/mdev = 1.458/1.534/1.611/0.085 ms
vEdge# ping vpn 1 10.20.25.16 source loopback0
Ping in VPN 1
PING 10.20.25.16 (10.20.25.16) from 10.20.30.15 : 56(84) bytes of data.
64 bytes from 10.20.25.16: icmp_seq=1 ttl=64 time=1.05 ms
^C
--- 10.20.25.16 ping statistics ---
1 packets transmitted, 1 received, 0% packet loss, time 0ms
rtt min/avg/max/mdev = 1.054/1.054/1.054/0.000 ms
vm5# ping vpn 1 10.20.25.16 source ge0/4
Ping in VPN 1
PING 10.20.25.16 (10.20.25.16) from 10.20.24.15 : 56(84) bytes of data.
64 bytes from 10.20.25.16: icmp_seq=1 ttl=64 time=1.35 ms
64 bytes from 10.20.25.16: icmp_seq=2 ttl=64 time=1.44 ms
^C
--- 10.20.25.16 ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1001ms
rtt min/avg/max/mdev = 1.350/1.397/1.444/0.047 ms
vEdge#
```

Related Topics

tools nping, on page 493
traceroute, on page 501

poweroff

Shut down the Cisco SD-WAN device. Issue this command when you need to power down a router. Do not simply unplug the router.

poweroff

Command History

Release	Modification
14.1	Command introduced.

Examples

```
vEdge# poweroff
Are you sure you want to power off the system? [yes NO] yes
Starting cleanup
Stopping vedge daemon: sysmgr.
Shutting down

Broadcast message from root@vm4 (pts/1) (Mon Feb 17 09:52:33 2014):

The system is going down for system halt NOW!
My-MacBook-Pro:~ me$
```

Related Topics

exit, on page 79
vshell, on page 503

prompt1

Set the operational prompt.

prompt1 *string*

Syntax Description

string	Operational Prompt: Set the operational prompt. The prompt can contain regular ASCII characters and the following special characters. Enclose the entire string in quotation marks: • \d—Current date in the format *yyyy-mm-dd* (for example, 2013-12-02). • \h—Hostname up to the first period (.). You configure the hostname with the **system hostname** command. • \H—Full hostname. You configure the hostname with the **system hostname** command. • \s—Source IP address of the local device. • \t—Current time in 24-hour *hh:mm:ss* format. • \A—Current time in 24-hour format. • \T—Current time in 12-hour *hh:mm:ss* format. • \@—Current time in 12-hour *hh:mm* format. • \u—Login username of the current user. • \m—Mode name. • \m{*n*}—Mode name, but the number of trailing components in the displayed path is limited to be a maximum of *n*, which is an integer. Characters removed are replaced with an ellipsis (...). • \M—Mode name in parentheses. • \M{*n*}—Mode name in parentheses, but the number of trailing components in the displayed path is limited to be a maximum of *n*, which is an integer. Characters removed are replaced with an ellipsis (...).

Command History

Release	Modification
14.1	Command introduced.

Examples

```
vEdge# prompt1 "\u-\d # "
admin-2013-12-02 #
```

Related Topics

prompt2, on page 93
show cli, on page 217

prompt2

Set the configuration mode prompt.

prompt2 *string*

Syntax Description

string	Operational Prompt: "*string*" Set the operational prompt. The prompt can contain regular ASCII characters and the following special characters. Enclose the entire string in quotation marks: • \d—Current date in the format *yyyy-mm-dd* (for example, 2013-12-02). • \h—Hostname up to the first period (.). You configure the hostname with the **system hostname** command. • \H—Full hostname. You configure the hostname with the **system hostname** command. • \s—Source IP address of the local device. • \t—Current time in 24-hour *hh:mm:ss* format. • \A—Current time in 24-hou *hh:mm* format. • \T—Current time in 12-hour *hh:mm:ss* format. • \@—Current time in 12-hour *hh:mm* format. • \u—Login username of the current user. • \m—Mode name. • \m{*n*}—Mode name, but the number of trailing components in the displayed path is limited to be a maximum of *n*, which is an integer. Characters removed are replaced with an ellipsis (...). • \M—Mode name in parentheses. • \M{*n*}—Mode name in parentheses, but the number of trailing components in the displayed path is limited to be a maximum of *n*, which is an integer. Characters removed are replaced with an ellipsis (...).

Command History

Release	Modification
14.1	Command introduced.

Examples

```
vEdge# prompt2 "\A on \h# "
vEdge# config
Entering configuration mode terminal
15:09 on vEdge#
```

Related Topics

prompt1, on page 92
show cli, on page 217

quit

Exit from the CLI session. The **exit** and **quit** commands do the same thing.

quit

Examples

```
vEdge# quit
My-MacBook-Pro:~ me$
```

Command History

Release	Modification
14.1	Command introduced.

Related Topics

exit, on page 79
vshell, on page 503

reboot

Reboot the Cisco SD-WAN device.

Any user can issue the **reboot** command, but the underlying logging mechanism does not log the user name. If you subsequently issue a **show reboot** history command, it shows that the reboot request was issued by an unnamed user.

Note You cannot issue the **reboot** command while a software upgrade is in progress.

reboot [**now**] **reboot other-boot-partition** [**no-sync**]

Syntax Description

(none)	Reboot the device. The software prompts you to confirm that you really want to reboot.

now	Reboot Immediately: Reboot the device immediately, with no prompt asking you to confirm that you want to reboot.
other-boot-partition	Reboot and Use the Software Image on the Other Disk Partition: (Available in releases 15.3 and earlier.) When rebooting the device, start the software image that is installed on the other disk partition. The software prompts you to confirm that you really want to reboot. If the other partition cannot be mounted or if the directory on the other partition is unreadable, an error message is displayed and the reboot operation is canceled.
other-boot-partition no-sync	Switch to the Other Software Image without Rebooting: (Available in releases 15.3 and earlier.) Switch to the software image that is installed on the other disk partition without rebooting the device. If the other partition cannot be mounted or if the directory on the other partition is unreadable, an error message is displayed and the switch operation is canceled.

Command History

Release	Modification
14.1	Command introduced.
14.2	Starting with the 14.2 release, you cannot issue the **reboot** command when a software upgrade is in progress.
15.3	Starting with the 15.3 release, the **reboot other-boot-partition** command prompts for confirmation.
15.4	Starting with 15.4 release, the **reboot other-boot-partition** command is replaced with the **request software activate** command.

Examples

Reboot

```
vEdge# reboot
Are you sure you want to reboot? [yes,NO] yes
Starting cleanup
Stopping viptela daemon: sysmgr.
Rebooting now

Broadcast message from root@vm4 (pts/1) (Wed Nov 27 13:36:07 2013):

The system is going down for reboot NOW!
user$ ssh vEdge
vEdge# show system status | display xml | include reboot_type
    <reboot_type>Unknown</reboot_type>
vEdge#
```

show boot-partition

```
vEdge# show boot-partition (available in Releases 15.3 and earlier)

PARTITION  ACTIVE  VERSION
----------------------------------------
1          X       14.2.4
2          -       -

vEdge# reboot other-boot-partition (available in Releases 15.3 and earlier)
No firmware present.
vEdge#
```

reboot other-boot-partition

```
vEdge# reboot other-boot-partition (available in Releases 15.3 and earlier)
Are you sure you want to boot using image in other boot partition? [yes,NO] <CR>
Aborted: by user

vEdge# reboot other-boot-partition no-sync (available in Releases 15.3 and earlier)
Are you sure you want to boot using image in other boot partition? [yes,NO] <CR>
Aborted: by user

vEdge# reboot other-boot-partition no-sync (available in Releases 15.3 and earlier)
Are you sure you want to boot using image in other boot partition? [yes,NO] yes
Stopping processes and rebooting
```

Related Topics

request software activate, on page 142
request software install, on page 143
show boot-partition, on page 198
show reboot history, on page 422
show software, on page 446
show system status, on page 459

request aaa unlock-user

Reset the account of a user whose account is locked. An account becomes locked when the user can no longer log in to a Cisco SD-WAN device.

request aaa unlock-user *username*

Syntax Description

username	Account To Reset: Name of the user account. **Note** Your account gets locked even if no password is entered multiple times. When you do not enter anything in the password field, it is considered as invalid or wrong password.

Command History

Release	Modification
15.4	Command introduced.

Examples

```
vEdge# request aaa unlock-user admin
vEdge#
```

Related Topics

aaa
show users, on page 475

request admin-tech

Collect system status information in a compressed tar file, to aid in troubleshooting and diagnostics. This tar file, which is saved in the user's home directory, contains the output of various commands and the contents of various files on the local device, including syslog files, files for each process (daemon) running on the device, core files, and configuration rollback files. For aid in troubleshooting, send the file to Cisco SD-WAN customer support.

If your Cisco SD-WAN device contains a large number of crash log files, it might take a few minutes for the **request admin-tech** command to complete.

On a single device, you can run only one **request admin-tech** command at a time. If a command is in progress, the device does not let a second one start.

When a process (daemon) on a Cisco SD-WAN device fails and that failure results in the device rebooting, the device automatically runs a **request admin-tech exclude-cores exclude-logs** file before the the device is rebooted.

To retrieve the admin-tech file from the Cisco SD-WAN device, use SCP. To do this, you must have login access to the device. To copy the file from the Cisco SD-WAN device, enter the shell from the Cisco SD-WAN CLI and issue a command in the following format:

```
vEdge# vshell
vEdge:~$ scp filename .tar.gz  username@host-name:path-name
```

request admin-tech [**delete-filename** *filename*] [**exclude-cores**] [**exclude-logs**] [**exclude-tech**]

vManage Equivalent

Tools ▶ Operational Commands ▶ Select device ▶ More Actions icon ▶ Admin Tech

Syntax Description

(none)	Collect all system status information, including core files, log files, and the process (daemon) and operational-related files that are stored in the /var/tech directory on the local device.
exclude-cores	Do Not Include Core Files: Do not include any core files in the compressed tar file. Core files are stored in the /var/crash directory on the local device.

exclude-logs	Do Not Include Log Files: Do not include any log files in the compressed tar file. Log files are stored in the /var/log directory on the local device.
exclude-logs	Do Not Include Process-Related Files: Do not include any process (daemon) and operational-related files in the compressed tar file. These files are stored in the /var/tech directory on the local device.

Command History

Release	Modification
14.1	Command introduced.
16.1	Added support for running only one **request admin-tech** command at a time.
16.3	Added **delete-file-name**, **exclude-cores**, **exclude-logs**, and **exclude-tech** options.
17.1	Added automatic collection of admin-tech information after a process fails.

Examples

Create an admin tech file and copy it to a user's home directory on a host in the network. For the SCP command, you must specify the full pathname of where to place the copied file.

```
vEdge# request admin-tech
Requested admin-tech initiated.
Created admin-tech file '/home/admin/20170712-123416-admin-tech.tar.gz'
vEdge# vshell
vEdge:~$ ls
20170712-123416-admin-tech.tar.gz archive_id_rsa.pub cacert.pem vEdge-signed-cert.pem
vEdge.csr vEdge_blank_config
vEdge:~$ tar -xvf 20170712-123416-admin-tech.tar.gz
var/log/auth.log
var/log/cloud-init.log
var/log/confd/
var/log/confd/devel.log
var/log/confd/error.log.siz
var/log/confd/snmp.log
var/log/confd/error.log.1
var/log/confd/error.log.idx
var/log/kern.log
var/log/lastlog
var/log/messages
var/log/messages.1
var/log/messages.2
var/log/messages.3
var/log/messages.4
var/log/pdb/
var/log/quagga/
var/log/tallylog
var/log/tmplog/
var/log/tmplog/vdebug
var/log/vconfd
var/log/vdebug
var/log/vdebug_2017-07-10_18_16_36.tar.gz
var/log/vdebug_2017-07-10_18_55_14.tar.gz
var/log/vmware-vmsvc.log
```

```
var/log/vsyslog
var/log/wtmp
var/tech/
var/tech/uboot_env
var/tech/confd
var/tech/system
var/tech/transport
var/tech/cxp
var/tech/dot1x
var/tech/cflowd
var/tech/dpi
var/tech/app_route
var/tech/config
var/tech/fpmd
var/tech/igmp
var/tech/hardware
var/tech/ompd
var/tech/ftmd
var/tech/dhcpd
var/tech/vdaemon
var/tech/snmp
var/tech/pimd
var/tech/vrrpd
var/tech/sysmgrd
var/tech/ttmd
var/tech/host_details
var/crash/
var/crash/core.cfgmgr.vm5
var/crash/info.core.cfgmgr.vm5.529.1499738114
var/confd/rollback/
var/confd/rollback/rollback22
var/confd/rollback/rollback13
var/confd/rollback/rollback8
var/confd/rollback/rollback9
var/confd/rollback/rollback2
var/confd/rollback/rollback27
var/confd/rollback/rollback5
var/confd/rollback/rollback20
var/confd/rollback/rollback0
var/confd/rollback/rollback1
var/confd/rollback/rollback3
var/confd/rollback/rollback21
var/confd/rollback/rollback25
var/confd/rollback/rollback19
var/confd/rollback/rollback4
var/confd/rollback/rollback23
var/confd/rollback/rollback28
var/confd/rollback/rollback7
var/confd/rollback/rollback18
var/confd/rollback/rollback10
var/confd/rollback/rollback24
var/confd/rollback/rollback12
var/confd/rollback/rollback15
var/confd/rollback/rollback11
var/confd/rollback/rollback6
var/confd/rollback/rollback16
var/confd/rollback/rollback26
var/confd/rollback/rollback14
var/confd/rollback/rollback17
vEdge~$ scp 20170712-123416-admin-tech.tar.gz eve@eve-host:~/.
vEdge-%

eve@eve-host:~$ ls 20170712-123416-admin-tech-tar.gz
```

```
20170712-123416-admin-tech-tar.gz
eve@eve-host:~$
```

Related Topics

admin-tech-on-failure
show crash, on page 241

request certificate

Install a certificate on the Cisco SD-WAN device (on vSmart controllers and vBond orchestrators only).

request certificate install *file-path* [**vpn** *vpn-id*]

Syntax Description

file-path	Path to Certificate File: Install the certificate in specified filename. The file can be in a your home directory on the local device, or it can be on a remote device reachable through VPN 0 and using FTP, HTTP, SCP, or TFTP. If you are using SCP, you are prompted for the directory name and filename. No file path name is provided. *file-path* can be one of the following: • *filename*—Path to a file in your home directory on the local Cisco SD-WAN device. • ftp: *file-path*—Path to a file on an FTP server. • http:// *url*/*file-path*—Path to a file on a webserver. • scp: *user@host*:*file-path* • tftp: *file-path*—Path to a file on a TFTP server.
vpn *vpn-id*	Specific VPN: VPN in which the certificate file is located. When you include this option, one of the interfaces in the specified VPN is used to retrieve the file. The interfaces on a vSmart controller are only in VPN 0, the VPN reserved for the control plane, so you can omit this option because vSmart images are always retrieved from VPN 0.

Command History

Release	Modification
14.1	Command introduced.

Related Topics

request csr upload, on page 105
show certificate validity, on page 217

request container image install

Install a vSmart software image on a vSmart controller container host (on vSmart controller container hosts only).

request container image install *filename* [**vpn** *vpn-id*]

Syntax Description

filename	Name of vSmart Software Image: Install the vSmart controller software image in the specified filename. The file can be in your home directory on the local device, or it can be on a remote device reachable through FTP, HTTP, SCP, or TFTP. If you are using SCP, you are prompted for the directory name and filename. No file path name is provided. *filename* has the format viptela-*release-number*-x86_64.tar.gz.
vpn *vpn-id*	When you include this option, one of the interfaces in the specified VPN is used to retrieve the software image. The interfaces on a vSmart controller are only in VPN 0, the VPN reserved for the control plane, so you can omit this option because vSmart images are always retrived from VPN 0. When you include this option, one of the interfaces in the specified VPN is used to retrieve the software image. The interfaces on a vSmart controller are only in VPN 0, the VPN reserved for the control plane, so you can omit this option because vSmart images are always retrived from VPN 0.

Command History

Release	Modification
16.2	Command introduced.

Related Topics

container

request container image remove, on page 101

request container image remove

Install a vSmart software image on a vSmart controller container host (on vSmart controller container hosts only).

request container image remove *filename*

Syntax Description

filename	Name of vSmart Software Image: Name of image that is installed on the vSmart controller container.

Command History

Release	Modification
16.2	Command introduced.

Related Topics

container
request container image install, on page 101

request control-tunnel add

Create a temporary tunnel to use when debugging a failed control connection (on vEdge routers only). One case when you might want to create a temporary tunnel is when a control connection fails to come up because of firewall rules or NAT issues. The Cisco SD-WAN software's forwarding process drops failed connections, so creating a temporary one allows you to triage the problem.

request control-tunnel add local-private-ip *ip-address* **local-private-port** *port-number* **remote-public-ip** *ip-address* **remote-public-port** *port-number*

Syntax Description

local-private-port *ip-address port-number*	Local Private IP Address and Port Number: Private IP address and port number for the local side of the tunnel connection. *port-number* can be a value from 0 through 65535.
remote-public-ip *ip-address* **remote-public-port** *port-number*	Remote Public IP Address and Port Number: Public IP address and port number for the remote side of the tunnel connection. can be a value from 0 through 65535. *port-number*

Command History

Release	Modification
16.1	Command introduced.

Examples

```
vEdge# request control-tunnel add local-private-ip 10.1.14.14
Value for 'local-private-port' (<0..65535>): 22234

Value for 'remote-public-ip' (<IP address>): 10.0.12.20
Value for 'remote-public-port' (<0..65535>): 23456
vEdge#
```

Related Topics

request control-tunnel delete, on page 103
tools nping, on page 493

request control-tunnel delete

Delete a temporary tunnel that you created to debug a failed control connection (on vEdge routers only). One case when you might want to create a temporary tunnel is when a control connection fails to come up because of firewall rules or NAT issues. The Cisco SD-WAN software's forwarding process drops failed connections, so creating a temporary one allows you to triage the problem.

request control-tunnel delete local-private-ip *ip-address* **local-private-port** *port-number* **remote-public-ip** *ip-address* **remote-public-port** *port-number*

Syntax Description

local-private-ip *ip-address* **local-private-port** *port-number*	Local Private IP Address and Port Number: Private IP address and port number for the local side of the tunnel connection. *port-number* can be a value from 0 through 65535.
remote-public-ip *ip-address* **remote-public-port** *port-number*	Remote Public IP Address and Port Number: Public IP address and port number for the remote side of the tunnel connection. *port-number* can be a value from 0 through 65535.

Command History

Release	Modification
16.1	Command introduced.

Related Topics

request control-tunnel add, on page 102

request controller add serial-num

Send the certificate serial number of a vManage NMS or a vSmart controller to the vBond orchestrator (on vManage NMSs only).

request controller add serial-num *number*

Syntax Description

number	Serial Number: Certificate serial number to send to the vManage or vSmart controller.

Command History

Release	Modification
15.4	Command introduced to replace the **request vsmart add serial-num** command.

Usage Guidelines

Note The **request controller add serial-num** command to add serial numbers is not supported on Cisco SD-WAN 20.x releases as changes are not persistent across reboots. You can add serial numbers through Cisco vManage. For more details on controller serial numbers, see Controller Serial Numbers to Cisco vBond Orchestrator.

Related Topics

request controller-upload serial-file, on page 105
request controller delete serial-num, on page 104
show control valid-vedges, on page 240
show control valid-vsmarts, on page 241
show orchestrator valid-vedges, on page 378
show orchestrator valid-vsmarts, on page 379

request controller delete serial-num

request controller delete serial-num—Delete a vSmart serial number from the vSmart controller serial number file on the local device.

request controller delete serial-num *number*

Syntax Description

number	Serial Number: vSmart serial number to delete from the vSmart serial number file on the local device.

Command History

Release	Modification
15.4	Command introduced to replace the **request vsmart delete serial-num** command.

Usage Guidelines

Note The **request controller delete serial-num** command to delete serial numbers is not supported on Cisco SD-WAN 20.x releases as changes are not persistent across reboots. You can delete serial numbers through Cisco vManage.

Related Topics

request controller-upload serial-file, on page 105
request controller add serial-num, on page 103
show control valid-vedges, on page 240
show control valid-vsmarts, on page 241
show orchestrator valid-vedges, on page 378

show orchestrator valid-vsmarts, on page 379

request controller-upload serial-file

request controller-upload serial-file—Upload the controller certificate serial number file to the local device (on vManage NMSs only). The local device retains these serial numbers even after you reboot it.

request controller-upload serial-file *filename* [**vpn** *vpn-id*]

Syntax Description

filename	Name of Certificate File: Install the specified file containing the list of serial numbers for the vManage NMSs and vSmart controllers in the overlay network. The file can be in your home directory on the local device, or it can be on a remote device reachable through FTP, HTTP, SCP, or TFTP. If you are using SCP, you are prompted for the directory name and filename. No file path name is provided.
vpn *vpn-id*	Specific VPN: VPN in which the certificate file is located. When you include this option, one of the interfaces in the specified VPN is used to retrieve the file. The interfaces on a vSmart controller are only in VPN 0, the VPN reserved for the control plane, so you can omit this option because vSmart images are always retrieved from VPN 0.

Command History

Release	Modification
15.4	Command introduced to replace the **request vsmart-upload serial-file** command.

Related Topics

request controller add serial-num, on page 103
request controller delete serial-num, on page 104

request csr upload

request csr upload—Upload a certificate signing request (CSR) to the Cisco SD-WAN device (on vSmart controllers and vBond orchestrators only).

request csr upload *path* [**regen-rsa**] [**regen-uuid**] [**vpn** *vpn-id*]

Syntax Description

path	Path to Certificate File: Upload the CSR in the file at the specified path. The path can be in a directory on the local device or on a remote device reachable through FTP, HTTP, SCP, or TFTP. If you are using SCP, you are prompted for the directory name and filename. No file path name is provided.
regen-rsa	(Optional) Regenerate RSA Key Pair: Generate a new RSA public-private key pair. The RSA key pair is stored in the server.key file in the /usr/share/viptela directory on the local device.

regen-uuid	(Optional) Regenerate UUID: Generate a new CSR with a unique UUID that is different from the previous UUID. You can specify this option only on a vBond orchestrator virtual machine (VM). The option is not available on vEdge router hardware, because the router's UUID is its chassis number.
vpn *vpn-id*	(Optional) Specific VPN: VPN in which the CSR file is located. When you include this option, one of the interfaces in the specified VPN is used to retrieve the file. The interfaces on a vSmart controller are only in VPN 0, the VPN reserved for the control plane, so you can omit this option because vSmart images are always retrieved from VPN 0.

Command History

Release	Modification
14.1	Command introduced.
14.2	Added the **org-name** and **regen-rsa** options.
15.3	Removed the **org-name** option. The command now prompts for the organization name.
17.1	Added support for multitenancy.

Examples

```
vSmart# request csr upload home/admin/vm9.csr
Uploading CSR via VPN 0
Enter organization name             : Cisco SD-WAN
Re-enter organization name          : Cisco SD-WAN
Generating CSR for this VSmart device
.........[DONE]
Copying ... /home/admin/vm9.csr via VPN 0
CSR upload successful
```

When the vBond orchestrator or vSmart controller is part of a software multitenant architecture, the command also prompts for the service provider organization name.

```
vSmart# request csr upload home/admin/vm9.csr
Uploading CSR via VPN 0
Enter service provider organization name        : SP Inc
Re-enter service provider organization name     : SP Inc
Enter organization name                         : Cisco SD-WAN
Re-enter organization name                      : Cisco SD-WAN
Generating CSR for this vSmart device
.........[DONE]
Copying ... /home/admin/vm9.csr via VPN 0
CSR upload successful
```

Related Topics

organization-name

request certificate, on page 100

request daemon ncs restart

request daemon ncs restart—Restart the NCS network configuration process (on vManage NMSs only). This process tracks the configurations of Cisco vEdge devices that are being managed by the vManage NMS.

request daemon ncs restart

Command History

Release	Modification
16.1.1	Command introduced.

Examples

```
vManage# request daemon ncs restart
vManage#
```

Related Topics

request nms application-server, on page 116

request device

request device—Add or delete a vEdge router chassis number on the vBond orchestrator that is acting as a ZTP server.

request device add chassis-number *number* strong>serial-numbernumber **validity** [**invalid** | **valid**] **vbond** *ip-address* **org-name** *name* [**port** *port-number*] [**enterprise-root-ca** *path*] **request device delete chassis-number** *number*

chassis-number *number*	Chassis Number: vEdge router chassis number.
validity invalid | **valid**	Device Validity: Whether the vEdge router is allowed to join the overlay network (**valid**) or is not allowed (**invalid**).
enterprise-root-ca *path*	Enterprise Root CA: Path to the enterprise root CA. The path can be an HTTP, FTP, or TFTP path.
org-name *name*	Organization Name: Name of your organization as specified in the device certificates.
port *port-number*	Port on the vBond Orchestrator: Port to use on the vBond orchestrator to reach the WAN network.
strong>serial-numbernumber	Serial Number: vEdge router serial number.

Command History

Release	Modification
14.3	Command introduced.

Examples

```
vBond# request device add chassis-number 12345 serial-number 6789 validity valid vbond 10.1.14.1 org-name cisco
Adding Chassis number 12345 to the database
Successfully added the chassis-number

Creating Serial file ..
Uploading serial numbers via VPN 0
Copying ... /home/admin/vedge_serial_entries via VPN 0
Successfully loaded the vEdge serial numbers
vBond# show ztp entries

                                                                    ROOT
       CHASSIS  SERIAL                       VBOND  ORGANIZATION   CERT
INDEX  NUMBER   NUMBER  VALIDITY  VBOND IP   PORT   NAME           PATH
-------------------------------------------------------------------------
1      12345    6789    valid     10.1.14.1  12346  cisco       default
```

Related Topics

request device-upload, on page 108
show ztp entries, on page 482

request device-upload

request device—Add vEdge router chassis numbers by uploading a file that contains the device information onto the vBond orchestrator that is acting as a ZTP server.

request device-upload chassis-file *file-path* [**vpn** *vpn-id*]

chassis-file *file-path*	Filename: Name of a CSV file containing the chassis information required by the ZTP server. *file-path* can be one of the following: • *filename*—Path to a file in your home directory on the local Cisco vEdge device. • **ftp:** *file-path*—Path to a file on an FTP server. • **http://** *url*/*file-path*—Path to a file on a webserver. • **scp:** *user@host:file-path* • *file-path*—Path to a file on a TFTP server. Each row in the CSV file must contain the following information for each vEdge router: • Chassis number • Serial number • Validity (either valid or invalid) • vBond IP address • vBond port number (entering a value is optional) • Organization name • Path to the root certification (entering a value is optional)
file-path **vpn** *vpn-id*	VPN: **vpn** *vpn-id* VPN in which the remote server is located.

Command History

Release	Modification
14.3	Command introduced.

Examples

The following example uploads the device information from the local router. Here, the root CA path is omitted, but the comma preceding its value is required.

```
vBond# vshell
vm4vBond~$ cat ztp-chassis-file
12345,6789,valid,10.1.14.1,12345,cisco,
vBond:~$ exit
exit
vBond request device-upload chassis-file /home/admin/ztp-chassis-file
Uploading chassis numbers via VPN 0
Copying ... /home/admin/ztp-chassis-file via VPN 0
Successfully loaded the chassis numbers file to the database.

Uploading the serial numbers to the vedge-list ...
Uploading serial numbers via VPN 0
Copying ... /home/admin/vedge_serial_entries via VPN 0
```

```
Successfully loaded the vEdge serial numbers
vBond# show ztp entries
                                                                        ROOT
       CHASSIS  SERIAL                        VBOND  ORGANIZATION     CERT
INDEX  NUMBER   NUMBER  VALIDITY  VBOND IP    PORT   NAME             PATH
-------------------------------------------------------------------------
1      12345    6789    valid     10.1.14.1   12345  cisco
```

Related Topics

request device, on page 107
show ztp entries, on page 482

request download

request download—Download a software image or other file to the Cisco SD-WAN device (on vEdge routers and vSmart controllers only).

request download [**vpn** *vpn-id*] *filename*

Syntax Description

filename	Name of Software Image or File: Download a software image or other file to the local Cisco SD-WAN device. The file can be on a remote device reachable through FTP, HTTP, HTTPS, SCP, or TFTP. If you are using SCP, you are prompted for the directory name and filename; no file path name is provided. The file is placed in your home directory on the local device.
vpn *vpn-id*	Specific VPN: VPN in which the remote device containing the file to be downloaded is located. When you include this option, one of the interfaces in the specified VPN is used to retrieve the software image.

Command History

Release	Modification
15.3.3	Command introduced on vEdge 100 routers.
15.4	Available on all routers and on vSmart controllers.

Related Topics

request software activate, on page 142
request software install, on page 143
request software install-image, on page 145
request software remove, on page 146
request software reset, on page 147
request software verify-image, on page 151
request upload, on page 153

request execute

request execute—Execute a shell command from within the Cisco SD-WAN CLI.

request execute [**vpn** *vpn-id*] *command* (in Releases 15.4 and later)

request execute [**vpn** *vpn-id*] "*command*" (in Releases 15.3 and earlier)

Syntax Description

command	Command: Run the specified command in the UNIX shell while still remaining in the Cisco SD-WAN CLI. In Releases 15.3 and earlier, you must enclose the command within quotation marks.
vpn *vpn-id*	VPN: Specific to the VPN in which to execute the command. The default *vpn-id* is VPN 0.

Command History

Release	Modification
14.1	Command introduced.
15.4	Enclosing the shell command in quotation marks is no longer necessary.

Examples

```
vSmart# request execute ls
Execute command in vpn 0 - ls
cacert.pem  vsmart-signed-cert-vm9.pem    vsmart-vm9.csr

vEdge# request execute vpn 512 ssh admin@10.0.1.1
```

To open an SSH connection from a vManage NMS to an IOS XE router, you must specify the port number, which is 830.

```
vManage# request execute vpn 0 ssh 172.16.255.15
ssh: connect to host 172.16.255.15 port 22: Connection refused
vManage# request execute vpn 0 ssh 172.16.255.15 -p 830
admin@172.16.255.15's password:
```

Related Topics

job stop, on page 83
monitor start, on page 85
monitor stop, on page 86
show jobs, on page 325
vshell, on page 503

request firmware upgrade

request firmware upgrade—Upgrade the boot loader (on vEdge routers only). After running this command, you must reboot the router.

request firmware upgrade *filename*

Syntax Description

filename	Boot Loader Filename: Name of the boot loader file. This file must be on the local device. To get the boot loader file, contact Cisco SD-WAN Customer Support.

Command History

Release	Modification
15.3.5	Command introduced.

Examples

```
vEdge# request firmware upgrade u-boot-n820c.bin
vEdge# reboot
```

Related Topics

reboot, on page 94

request interface-reset

request interface-reset—Reset an interface. This command shuts down and then restarts an interface. The operation occurs so quickly that no indication of the interface's being down is reported in the IF STATUS fields in the output of the **show interface** command.

request interface-reset interface *interface-name* **vpn** *vpn-id*

Syntax Description

interface *interface-name*	Interface Name: Name of the interface to reset.
vpn *vpn-id*	VPN: VPN in which the interface resides.

Command History

Release	Modification
15.3	Command introduced.

Examples

```
vEdge# request interface-reset interface ge0/4 vpn 1
vEdge#
```

Related Topics

show interface, on page 265

request ipsec ike-rekey

request ipsec ike-rekey—Force the generation of new keys for an IKE session (on vEdge routers only).

request ipsec ike-rekey vpn *vpn-id* **interface ipsec** *number*

Syntax Description

ipsec *number*	Interface Name: Name of the IPsec interface on which to force the generation of new keys for an IKE session.
vpn *vpn-id*	VPN: VPN in which the IPsec interface is located.

Command History

Release	Modification
17.2	Command introduced.

Examples

Generate a new key for an IKE session. After the new key is generated, the SPI for the session changes and the uptime for the sessions resets to zero. You cannot directly display the old and new keys.

```
vEdge# show ipsec ike sessions

     IF                          SOURCE              DEST
VPN  NAME    VERSION  SOURCE IP   PORT    DEST IP     PORT  INITIATOR SPI     RESPONDER SPI     CIPHER SUITE     DH GROUP        STATE        UPTIME
-------------------------------------------------------------------------------------------------------------------------------------------------
1    ipsec1  2        10.1.16.16  4500    10.1.15.15  4500  d58a40949a1e6ef8  5906334ba438d48c  aes256-cbc-sha1  16 (MODP-4096)  ESTABLISHED  0:00:02:08

vEdge# request ipsec ipsec-rekey vpn 1 interface ipsec1
vEdge# show ipsec ike sessions

     IF                          SOURCE              DEST
VPN  NAME    VERSION  SOURCE IP   PORT    DEST IP     PORT  INITIATOR SPI     RESPONDER SPI     CIPHER SUITE     DH GROUP        STATE        UPTIME
-------------------------------------------------------------------------------------------------------------------------------------------------
1    ipsec1  2        10.1.16.16  4500    10.1.15.15  4500  ecdc1457fbd38824  1ee5fd9f7a645c44  aes256-cbc-sha1  16 (MODP-4096)  ESTABLISHED  0:00:00:18
```

Related Topics

rekey
request ipsec ipsec-rekey, on page 114
show ipsec ike inbound-connections, on page 307
show ipsec ike outbound-connections, on page 308
show ipsec ike sessions, on page 310

request ipsec ipsec-rekey

request ipsec ipsec-rekey—Force the generation of a new security parameter index (SPI) for an IPsec tunnel that is being used for IKE sessions (on vEdge routers only).

request ipsec ipsec-rekey interface ipsec *number* **vpn** *vpn-id*

Syntax Description

ipsec *number*	Interface Name: Name of the IPsec interface on which to force the generation of new keys for an IKE session.
vpn *vpn-id*	VPN: VPN in which the IPsec interface is located.

Command History

Release	Modification
17.2	Command introduced.

Examples

Generate a new SPI for an IKE-enabled IPsec tunnel.

```
vEdge# show ipsec ike inbound-connections

SOURCE                                  SOURCE  DEST                                    DEST    NEW     OLD     CIPHER           NEW       OLD
IP                                      PORT    IP                                      PORT    SPI     SPI     SUITE            KEY HASH  KEY HASH
-----------------------------------------------------------------------------------------------------------------------------------------------
10.1.15.15                              4500    10.1.16.16                              4500    263     262     aes256-cbc-sha1  ****2474  ****ea42

vEdge# request ipsec ipsec-rekey vpn 1 interface ipsec1
vEdge# show ipsec ike inbound-connections

SOURCE                                  SOURCE  DEST                                    DEST    NEW     OLD     CIPHER           NEW       OLD
IP                                      PORT    IP                                      PORT    SPI     SPI     SUITE            KEY HASH  KEY HASH
-----------------------------------------------------------------------------------------------------------------------------------------------
10.1.15.15                              4500    10.1.16.16                              4500    265     264     aes256-cbc-sha1  ****6653  ****d581
```

Related Topics

rekey
request ipsec ike-rekey, on page 113
show ipsec ike inbound-connections, on page 307
show ipsec ike outbound-connections, on page 308
show ipsec ike sessions, on page 310

request nms all

request nms all—Start, stop, and perform other operations on all vManage cluster components running on the local vManage NMS (on vManage NMSs only). The cluster components are the application server (the HTTP web server for the vManage NMS), the vManage configuration and statistics databases, the messaging and coordination server, and the load balancer.

request nms all (**diagnostics** | **jcmd** *option* | **restart** | **start** | **status** | **stop**)

Syntax Description

status	Determine the Status of All vManage Cluster Components: Determine the status of all vManage cluster components.
jcmd *option*	Display Java Process Information: Display information from Java processes running on all vManage cluster components. *option* can be one of the following: • **gc-class-histo**—Histogram of the Java garbage collector. Garbage collection identifies which objects are being used in heap memory. • **gc-class-stats**—Statistics of the Java garbage collector. • **thread-print**—Information about the Java threads. • **vm-cmd**—Java virtual machine commands. • **vm-flags**—Java virtual machine flags. • **vm-sys-props**—Java virtual machine system properties. • **vm-uptime**—Java virtual machine uptime. • **vm-ver**—Java virtual machine version .
restart	Restart All vManage Cluster Components.
diagnostics	Run Diagnostics on All vManage Cluster Components.
start	Start All vManage Cluster Components.
stop	Stop All vManage Cluster Components.

Command History

Release	Modification
16.1	Command introduced.
16.2.3	Added the **diagnostics** option.

Examples

```
vManage# request nms all status
NMS application server
    Enabled: true
    Status:  running PID:5877 for 2232s
NMS configuration database
    Enabled: true
    Status:  running PID:9132 for 235s
NMS coordination server
    Enabled: true
    Status:  running PID:28143 for 9591s
NMS messaging server
    Enabled: true
```

```
    Status:  running PID:22267 for 11508s
NMS statistics database
    Enabled: true
    Status:  running PID:472 for 48357s
NMS load balancer
    Enabled: false
    Status:  not running
```

Related Topics

request nms application-server, on page 116
request nms configuration-db, on page 121
request nms coordination-server, on page 123
request nms messaging-server, on page 124
request nms statistics-db, on page 127

request nms application-server

request nms application-server—Start, stop, and perform other operations on a vManage HTTP web server (on vManage NMSs only).

request nms application-server (**diagnostics** | **jcmd** *option* | **resize-data-partition** | **restart** | **software** *option* | **start** | **status** | **stop** | **update-logo** *filename*)

Syntax Description

status	Determine the status of the local vManage web server.
jcmd *option*	Display Java Process Information: Display information from a Java process running on the vManage web server. *option* can be one of the following: • **gc-class-histo**—Histogram of the Java garbage collector. Garbage collection identifies which objects are being used in heap memory. • **gc-class-stats**—Statistics of the Java garbage collector. • **gc-heap-dump**—Snapshot of the Java garbage collector. • **thread-print**—Information about the Java threads running on the vManage web server. • **vm-cmd**—Java virtual machine commands on the vManage web server. • **vm-flags**—Java virtual machine flags on the vManage web server. • **vm-sys-props**—Java virtual machine system properties on the vManage web server. • **vm-uptime**—Java virtual machine uptime on the vManage web server. • **vm-ver**—Java virtual machine version on the vManage web server.

update-logo *large-logo-filename small-logo-filename*	Load a Custom Logo onto the vManage Web Server: Load a logo image to use in the upper left corner of all vManage web application server screens. You can load two files, a larger version, which is displayed on wider browser screens, and a smaller version, which is displayed when the screen size narrows. Both files must be PNG files located on the local device, and both must be 1 MB or smaller in size. For best resolution, it is recommended that the image for the large logo be 180 x 33 pixels, and for the small logo 30 x 33 pixels.
resize-data-partition	Resize Third vManage Partition: Automatically resize the third partition on the vManage NMS if the hypervisor has increased the size of this partition. This partition is the vManage database volume and contains all vManage databases and information related to them. vManage NMS calculates the size of the database volume only when it is initially created. If the hypervisor capabilities cause the database volume size to increase, the vManage NMS recognizes this space and can utilize it only if you issue the **request nms application-server resize-data-partition** command.
restart	Restart the vManage Web Server: Restart the local vManage web server.
diagnostics	Run Diagnostics on vManage Web Server: Run diagnostics on the vManage web server.
start	Start the local vManage web server.
stop	Stop the vManage Web Server: Stop the local vManage web server.
software *option*	Web Application Server Software Control: Control the software running on the vManage application server. can be: *option* can be: • **reset**—Undo a software upgrade on the vManage server, and return to the previous software image. • **upgrade** *filename*—Upgrade the software on the vManage server to the image in the specified file. • **version**—Display the version of software running on the vManage server.

Command History

Release	Modification
16.1	Command introduced.
16.2.2	Added **version** option.
16.2.3	Added **software** option and move **version** option under **software**, and added **diagnostics** option.
17.2	Added **resize-data-partition**, **software reset**, and **software upgrade** options.
20.4	**gc-heap-dump** jcmd option is visible for netadmin user without unhide command.

Release	Modification
20.13.1	Added **status** to the command output. When using the status option, the command output indicates whether there is a schema violation in the configuration database.

Examples

Perform various operations on the local vManage application server

```
vManage# request nms application-server status
NMS application server
    Enabled: true
    Status:  running PID:28271 for 7313s
vManage# request nms application-server stop
vManage# request nms application-server restart
NMS application server is not running
Successfully started NMS application server
vManage# request nms application-server status
NMS application server
    Enabled: true
    Status:  running PID:5877 for 6s
vManage# request nms application-server jcmd vm-uptime
NMS application server
5877:
21.357 s
vManage#
```

Determine the version of software running on the vManage NMS web server

```
vManage# request nms application-server version


NMS application server is running version bamboo-20160805-0008 on vManage version 16.2.2
```

Check for Database Schema Violation

The following example, which includes the status option, displays the NMS application server status. Starting from Cisco Catalyst SD-WAN Manager Release 20.13.1, the command indicates whether there are any schema violations in the configuration database. In this example, the command output includes a message indicating a schema violation. If you encounter a schema violation, contact Cisco Customer Support to resolve the issue.

```
SDWAN-Manager# request nms application-server status
NMS application server
 Enabled: false
 Message: Schema Violation
 Status: not running
SDWAN-Manager#
```

Related Topics

request nms all, on page 114
request nms configuration-db, on page 121
request nms coordination-server, on page 123
request nms messaging-server, on page 124

request nms statistics-db, on page 127

request nms cluster diagnostics

To analyze the health of a Cisco SD-WAN Manager cluster, use the **request nms cluster diagnostics** command in privileged EXEC mode.

request nms cluster diagnostics

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco vManage Release 20.9.1	This command was introduced.

Usage Guidelines

Run the command directly on the Cisco SD-WAN Manager device for which you are running the Cisco SD-WAN Manager cluster.

The **request nms cluster diagnostics** command provides Cisco SD-WAN Manager cluster diagnostics information and status information for the following Cisco SD-WAN Manager services:

- Application server
- Messaging server
- Configuration database
- Statistics database service
- Coordination server

Examples

The following is a sample output from the **request nms cluster diagnostics** command:

```
Device# request nms cluster diagnostics

Note: This output only compares the cluster configuration of each service running on this
specific vManage against its operational state.
For overall cluster health, please check the Cluster Status page on UI.

hosts in cluster:
10.0.105.39 10.0.105.38 10.0.105.32

Checking services running on 10.0.105.32

persona: COMPUTE_AND_DATA

****************************************
Check application-server cluster status
status: OK
```

```
****************************************
check configuration-db status
Get cluster overview:
id, addresses, databases, groups
"8b82367b-5e47-496f-b9ef-683c61ada642", ["bolt://10.0.105.32:7687",
"http://10.0.105.32:7474"], {neo4j: "LEADER", system: "FOLLOWER"}, []
"b47faeb4-9089-4a3e-9275-fbed96d086a2", ["bolt://10.0.105.38:7687",
"http://10.0.105.38:7474"], {neo4j: "FOLLOWER", system: "FOLLOWER"}, []
"0e20db23-fca6-4767-9bf1-8262323a37dd", ["bolt://10.0.105.39:7687",
"http://10.0.105.39:7474"], {neo4j: "FOLLOWER", system: "LEADER"}, []
status: configuration-db's config & operational states are Consistent

****************************************
check messaging-server cluster status
messaging-server role on this node: Leader
status: messaging-server's config & operational states are Consistent

****************************************
check Elasticsearch cluster status
status: Elasticsearch's config & operational states are Consistent

****************************************
check coordination-server cluster status
server.0=0.0.0.0:2888:3888:participant
server.1=10.0.105.38:2888:3888:participant
server.2=10.0.105.39:2888:3888:participant
status: coordination server's config & operational states are Consistent
```

Related Commands

Commands	Description
request admin-tech	Collect system status information in a compressed tar file to aid in troubleshooting and diagnostics.
request nms all	Start, stop, and perform other operations on all Cisco SD-WAN Manager cluster services.
request nms application-server	Start, stop, and perform other operations on a Cisco SD-WAN Manager HTTP web server.
request nms configuration-db	Start, stop, and perform other operations on the localCisco SD-WAN Manager configuration database.
request nms coordination-server	Start, stop, and perform other operations on the local Cisco SD-WAN Manager coordination server.
request nms messaging-server	Start, stop, and perform other operations on the local Cisco SD-WAN Manager messaging server.
request nms statistics-db	Start, stop, and perform other operations on the local Cisco SD-WAN Manager statistics database.
request nms-server	Start and stop a Cisco SD-WAN Manager server and display the status of the server.
request nms server-proxy	Display the status of the Cisco SD-WAN Manager server-proxy for the configured management IP address and port.

request nms configuration-db

To start, stop, and perform other operations on the local Cisco SD-WAN Manager configuration database use the **request nms configuration-db** in privileged EXEC mode. The Cisco SD-WAN Manager configuration database stores device and feature templates and configurations created on the local device.

request nms configuration-db { **backup path** *path* | **configure** | **diagnostics** | **disable-daily-backup** | **enable-daily-backup** | **jcmd** | **restart** | **restore path** *path* | **start** | **status** | **stop** | **update-admin-user** | **upgrade** }

Syntax Description

backup path *path*	Performs back up of the configuration database to the specified file location.
configure	Configures the local Cisco SD-WAN Manager configuration database.
diagnostics	Runs diagnostics on local Cisco SD-WAN Manager configuration database.
disable-daily-backup	Disables local Cisco SD-WAN Manager configuration database daily backup cronjob.
enable-daily-backup	Enables local Cisco SD-WAN Manager configuration database daily backup cronjob. Up to three backups files are stored in the location that you specify with the **backup path** *path* keyword. A back up file is named configdb-daily.*x*.tar.gz, where *x* is 1, 2, or 3. After three backup files are stored, the oldest file is overwritten when the next backup is performed.
jcmd *option*	Displays information from the Java processes running on the local Cisco SD-WAN Manager configuration database. *option* can be one of the following: • **gc-class-histo**—Histogram of the Java garbage collector. Garbage collection identifies which objects are being used in heap memory. • **gc-class-stats**—Statistics of the Java garbage collector. • **thread-print**—Information about the Java threads running on the vManage web server. • **vm-cmd**—Java virtual machine commands on the vManage web server. • **vm-flags**—Java virtual machine flags on the vManage web server. • **vm-sys-props**—Java virtual machine system properties on the vManage web server. • **vm-uptime**—Java virtual machine uptime on the vManage web server. • **vm-ver**—Java virtual machine version on the vManage web server.
restart	Restarts the Cisco SD-WAN Manager configuration database.
restore path *path*	Restores Cisco SD-WAN Manager configuration database from the file located at a specified path.

start	Starts the local Cisco SD-WAN Manager configuration database.
status	Determines the status of the local Cisco SD-WAN Manager configuration database.
stop	Stops the Cisco SD-WAN Manager Configuration Database: Stop the local vManage configuration database.
update-admin-user	Updates configuration database admin user information.
upgrade	Upgrades the configuration database on any one node in the cluster.

Command History

Release	Modification
16.1	Command introduced.
16.2.3	This command was modified. The **diagnostics** keyword is added.
20.3.1	This command was modified. The following keywords were added: **disable-daily-backup**, **enable-daily-backup**, **upgrade**

Examples

Perform various operations on the localCisco SD-WAN Manager configuration database

```
vManage# request nms configuration-db status
NMS configuration database
    Enabled: true
    Status:  running PID:25778 for 10601s


vManage# request nms configuration-db stop
Successfully stopped NMS configuration database


vManage# request nms configuration-db restart
Successfully restarted NMS configuration database
vManage# vManage
NMS configuration database
    Enabled: true
    Status:  running PID:9132 for 5s
```

```
vManage# request nms configuration-db jcmd vm-ver
NMS configuration database
9132:
Java HotSpot(TM) 64-Bit Server VM version 25.72-b15
JDK 8.0_72
```

Verify if the daily backup is enabled:

```
vmanage# request nms configuration-db status

NMS configuration database
       Enabled: true
       Status:  running PID:25778 for 10601s
       Daily Backup: Enabled
```

Related Topics

request nms all, on page 114
request nms application-server, on page 116
request nms coordination-server, on page 123
request nms messaging-server, on page 124
request nms statistics-db, on page 127

request nms coordination-server

request nms coordination-server—Start, stop, and perform other operations on the local vManage coordination server (on vManage NMSs only). The vManage coordination and messaging server work together to distribute messages and share state among all the vManage NMSs in a vMange cluster.

request nms coordination-server (**diagnostics** | **jcmd** *option* | **restart** | **start** | **status** | **stop**)

Syntax Description

status	Determine the Status of the Coordination Server: Determine the status of the local coordination server.
jcmd *option*	Display Java Process Information: Display information from Java processes running on the coordination server. *option* can be one of the following: • **gc-class-histo**—Histogram of the Java garbage collector. Garbage collection identifies which objects are being used in heap memory. • **gc-class-stats**—Statistics of the Java garbage collector. • **thread-print**—Information about the Java threads running on the vManage web server. • **vm-cmd**—Java virtual machine commands on the vManage web server. • **vm-flags**—Java virtual machine flags on the vManage web server. • **vm-sys-props**—Java virtual machine system properties on the vManage web server. • **vm-uptime**—Java virtual machine uptime on the vManage web server. • **vm-ver**—Java virtual machine version on the vManage web server.
restart	Restart the Coordination Server: Restart the local coordination server.
diagnostics	Run Diagnostics on the Coordination Server: Run diagnostics on the local vManage coordination server.
start	Start the Coordination Server: Start the local coordination server.
stop	Stop the Coordination Server: Stop the local coordination server.

Command History

Release	Modification
16.1	Command introduced.
16.2.3	Added the **diagnostics** option.

Examples

Perform various operations on the local vManage coordination server

```
vManage# request nms coordination-server status
NMS coordination server
    Enabled: true
    Status:  running PID:28143 for 11160s
vManage#
```

Related Topics

request nms all, on page 114
request nms application-server, on page 116
request nms configuration-db, on page 121
request nms messaging-server, on page 124
request nms statistics-db, on page 127

request nms messaging-server

request nms messaging-server—Start, stop, and perform other operations on the local vManage messaging server (on vManage NMSs only). The vManage coordination and messaging server work together to distribute messages and share state among all the vManage NMSs in a vManage cluster.

request nms messaging-server (**diagnostics** | **jcmd** *option* | **restart** | **start** | **status** | **stop**)

Syntax Description

status	Determine the Status of the Messaging Server: Determine the status of the local messaging server.

jcmd *option*	Display Java Process Information: Display information from Java processes running on the messaging server. *option* can be one of the following: • **gc-class-histo**—Histogram of the Java garbage collector. Garbage collection identifies which objects are being used in heap memory. • **gc-class-stats**—Statistics of the Java garbage collector. • **thread-print**—Information about the Java threads running on the vManage web server. • **vm-cmd**—Java virtual machine commands on the vManage web server. • **vm-flags**—Java virtual machine flags on the vManage web server. • **vm-sys-props**—Java virtual machine system properties on the vManage web server. • **vm-uptime**—Java virtual machine uptime on the vManage web server. • **vm-ver**—Java virtual machine version on the vManage web server.
restart	Restart the Messaging Server: Restart the local messaging server.
diagnostics	Run Diagnostics on the Message Server: Run diagnostics on the local vManage message server.
start	Start the Messaging Server: Start the local messaging server.
stop	Stop the Messaging Server: Stop the local messaging server.

Command History

Release	Modification
16.1	Command introduced.
16.2.3	Added the **diagnostics** option.

Examples

Perform various operations on local vManage messaging server

```
vManage# request nms messaging-server status
NMS messaging server
    Enabled: true
    Status:  running PID:22267 for 13679s
vManage#
```

Related Topics

request nms all, on page 114
request nms application-server, on page 116
request nms coordination-server, on page 123
request nms statistics-db, on page 127

request nms olap-db

To start, stop, or restart the Cisco vManage online analytical processing (OLAP) database, or to view the status of the database, use the **request nms olap-db** command in privileged EXEC mode.

request nms olap-db [**start** | **stop** | **restart** | **status**]

Syntax Description

start	Start the OLAP database.
stop	Stop the OLAP database.
restart	Restart the OLAP database.
status	Display the status of the OLAP database.

Command Default

The OLAP database service is started by default, and you don't have to manually start it.

Command Modes

Privileged EXEC mode.

Command History

Release	Modification
Cisco vManage Release 20.11.1	This command was introduced.

Example

The following example shows how to start the OLAP database:

```
vmanage# request nms olap-db start

Successfully started NMS OLAP database
```

The following example shows how to stop the OLAP database:

```
vmanage# request nms olap-db stop

Successfully stopped NMS OLAP database
```

The following example shows how to restart the OLAP database:

```
vmanage# request nms olap-db restart

Successfully restarted NMS OLAP database
```

The following example displays the status of the OLAP database:

```
vmanage# request nms olap-db status

NMS OLAP database

        Enabled: true

        Status: running PID:65218 for 2981335s
```

request nms statistics-db

Start, stop, and perform other operations on the local vManage statistics database (on vManage NMSs only). The vManage statistics database stores all real-time statistics from the local vManage NMS.

request nms statistics-db (**allocate-shards** | **diagnostics** | **jcmd** *option* | **restart** | **start** | **status** | **stop**)

Syntax Description

allocate-shards	Allocate Unassigned Database Shards. Check for unassigned shards in the vManage statistics database, and assign them.
diagnostics	Run diagnostics on the local vManage statistics database.
jcmd *option*	Display information from a Java process running on the vManage web server. Option can be one of the following: • **gc-class-histo**—Histogram of the Java garbage collector. Garbage collection identifies which objects are being used in heap memory. • **gc-class-stats**—Statistics of the Java garbage collector. • **thread-print**—Information about the Java threads running on the vManage web server. • **vm-cmd**—Java virtual machine commands on the vManage web server. • **vm-flags**—Java virtual machine flags on the vManage web server. • **vm-sys-props**—Java virtual machine system properties on the vManage web server. • **vm-uptime**—Java virtual machine uptime on the vManage web server. • **vm-ver**—Java virtual machine version on the vManage web server.
restart	Restart the local vManage statistics database.
start	Start the local vManage statistics database.
status	Determine the status of the local vManage statistics database.
stop	Stop the local vManage statistics database.

Command History

Release	Modification
16.1	Command introduced.
16.2.3	Command modified. Diagnostics option added.
16.3	Command modified. allocate-shards option added

Example

Perform various operations on local vManage statistics database:

```
vManage# request nms statistics-db status
NMS statistics database
 Enabled: true
 Status:  running PID:472 for 48607s
vManage# request nms statistics-db stop
Successfully stopped NMS statistics database
vManage# request nms statistics-db restart
Successfully restarted NMS statistics database
vManage# request nms statistics-db status
NMS statistics database
    Enabled: true
    Status:  running PID:10353 for 4s
vManage# request nms statistics-db jcmd vm-sys-props
NMS statistics database
10353:
#Mon Mar 21 18:45:06 PDT 2016
jna.platform.library.path=/lib64\:/usr/lib\:/lib
java.runtime.name=Java(TM) SE Runtime Environment
sun.boot.library.path=/usr/lib/jvm/jdk1.8.0_72/jre/lib/amd64
java.vm.version=25.72-b15
es.path.home=/var/lib/elasticsearch
java.vm.vendor=Oracle Corporation
java.vendor.url=http\://java.oracle.com/
path.separator=\:
java.vm.name=Java HotSpot(TM) 64-Bit Server VM
file.encoding.pkg=sun.io
user.country=US
sun.java.launcher=SUN_STANDARD
sun.os.patch.level=unknown
jna.nosys=true
java.vm.specification.name=Java Virtual Machine Specification
user.dir=/var/lib/elasticsearch/bin
java.runtime.version=1.8.0_72-b15
java.awt.graphicsenv=sun.awt.X11GraphicsEnvironment
java.endorsed.dirs=/usr/lib/jvm/jdk1.8.0_72/jre/lib/endorsed
os.arch=amd64
java.io.tmpdir=/tmp
line.separator=\n
java.vm.specification.vendor=Oracle Corporation
os.name=Linux
sun.jnu.encoding=ANSI_X3.4-1968
jnidispatch.path=/tmp/jna-564784475/jna988152057480690449.tmp
java.library.path=/usr/java/packages/lib/amd64\:/usr/lib64\:/lib64\:/lib\:/usr/lib
sun.nio.ch.bugLevel=
java.specification.name=Java Platform API Specification
java.class.version=52.0
sun.management.compiler=HotSpot 64-Bit Tiered Compilers
```

```
os.version=3.10.62-ltsi
user.home=/home/vmanage
user.timezone=America/Los_Angeles
java.awt.printerjob=sun.print.PSPrinterJob
file.encoding=UTF-8
java.specification.version=1.8
es.logger.prefix=
user.name=vmanage
java.class.path=/var/lib/elasticsearch/lib/elasticsearch-2.2.0.jar\
:/var/lib/elasticsearch/lib/HdrHistogram-2.1.6.jar\
:/var/lib/elasticsearch/lib/apache-log4j-extras-1.2.17.jar\
:/var/lib/elasticsearch/lib/commons-cli-1.3.1.jar\
:/var/lib/elasticsearch/lib/compiler-0.8.13.jar\
:/var/lib/elasticsearch/lib/compress-lzf-1.0.2.jar\
:/var/lib/elasticsearch/lib/elasticsearch-2.2.0.jar\
:/var/lib/elasticsearch/lib/guava-18.0.jar\
:/var/lib/elasticsearch/lib/hppc-0.7.1.jar\
:/var/lib/elasticsearch/lib/jackson-core-2.6.2.jar\
:/var/lib/elasticsearch/lib/jackson-dataformat-cbor-2.6.2.jar\
:/var/lib/elasticsearch/lib/jackson-dataformat-smile-2.6.2.jar\
:/var/lib/elasticsearch/lib/jackson-dataformat-yaml-2.6.2.jar\
:/var/lib/elasticsearch/lib/jna-4.1.0.jar\
:/var/lib/elasticsearch/lib/joda-convert-1.2.jar\
:/var/lib/elasticsearch/lib/joda-time-2.8.2.jar\
:/var/lib/elasticsearch/lib/jsr166e-1.1.0.jar\
:/var/lib/elasticsearch/lib/jts-1.13.jar\
:/var/lib/elasticsearch/lib/log4j-1.2.17.jar\
:/var/lib/elasticsearch/lib/lucene-analyzers-common-5.4.1.jar\
:/var/lib/elasticsearch/lib/lucene-backward-codecs-5.4.1.jar\
:/var/lib/elasticsearch/lib/lucene-core-5.4.1.jar\
:/var/lib/elasticsearch/lib/lucene-grouping-5.4.1.jar\
:/var/lib/elasticsearch/lib/lucene-highlighter-5.4.1.jar\
:/var/lib/elasticsearch/lib/lucene-join-5.4.1.jar\
:/var/lib/elasticsearch/lib/lucene-memory-5.4.1.jar\
:/var/lib/elasticsearch/lib/lucene-misc-5.4.1.jar\
:/var/lib/elasticsearch/lib/lucene-queries-5.4.1.jar\
:/var/lib/elasticsearch/lib/lucene-queryparser-5.4.1.jar\
:/var/lib/elasticsearch/lib/lucene-sandbox-5.4.1.jar\
:/var/lib/elasticsearch/lib/lucene-spatial-5.4.1.jar\
:/var/lib/elasticsearch/lib/lucene-spatial3d-5.4.1.jar\
:/var/lib/elasticsearch/lib/lucene-suggest-5.4.1.jar\
:/var/lib/elasticsearch/lib/netty-3.10.5.Final.jar\
:/var/lib/elasticsearch/lib/securesm-1.0.jar\
:/var/lib/elasticsearch/lib/snakeyaml-1.15.jar\
:/var/lib/elasticsearch/lib/spatial4j-0.5.jar\
:/var/lib/elasticsearch/lib/t-digest-3.0.jar
java.vm.specification.version=1.8
java.home=/usr/lib/jvm/jdk1.8.0_72/jre
sun.arch.data.model=64
sun.java.command=org.elasticsearch.bootstrap.Elasticsearch start
user.language=en
java.specification.vendor=Oracle Corporation
awt.toolkit=sun.awt.X11.XToolkit
java.vm.info=mixed mode
java.version=1.8.0_72
java.ext.dirs=/usr/lib/jvm/jdk1.8.0_72/jre/lib/ext\
:/usr/java/packages/lib/ext
sun.boot.class.path=/usr/lib/jvm/jdk1.8.0_72/jre/lib/resources.jar\
:/usr/lib/jvm/jdk1.8.0_72/jre/lib/rt.jar\
:/usr/lib/jvm/jdk1.8.0_72/jre/lib/sunrsasign.jar\
:/usr/lib/jvm/jdk1.8.0_72/jre/lib/jsse.jar\
:/usr/lib/jvm/jdk1.8.0_72/jre/lib/jce.jar\
:/usr/lib/jvm/jdk1.8.0_72/jre/lib/charsets.jar\
:/usr/lib/jvm/jdk1.8.0_72/jre/lib/jfr.jar\
```

```
:/usr/lib/jvm/jdk1.8.0_72/jre/classes
java.vendor=Oracle Corporation
java.awt.headless=true
file.separator=/
java.vendor.url.bug=http\://bugreport.sun.com/bugreport/
sun.io.unicode.encoding=UnicodeLittle
sun.cpu.endian=little
sun.cpu.isalist=
vSmart#
```

Related Topics

request nms all, on page 114
request nms application-server, on page 116
request nms configuration-db, on page 121
request nms coordination-server, on page 123
request nms statistics-db, on page 127

request nms-server

Start and stop a vManage NMS, and display the status of the NMS (on vManage NMSs only).

```
request nms-server (start | status | stop)
```

Syntax Description

start	Start or restart the local vManage NMS.
status	Determine the status of the local vManage NMS.
stop	Stop the local vManage NMS.

Command History

Release	Modification
15.4	Command introduced.

Examples

Check the status of the local vManage NMS, stop and start the server

```
vManage# request nms-server status
NMS webserver is running
vManage# request nms-server stop
Successfully stopped NMS webserver
vManage# request nms-server status
NMS webserver is not running
vManage# request nms-server start
Successfully started NMS webserver
vManage# request nms-server status
NMS webserver is running
```

request nms server-proxy

To display the status of the NMS server-proxy for the configured management IP address and port, use the **request nms server-proxy** command.

request nms server-proxy set management-ip *ip-address port*

Syntax Description

set	Set NMS component.
management-ip	Update service proxy management IP configuration.
ip-address	Enter the Cisco SD-WAN Manager management IP address. Default: 127.0.0.1
port	Enter the Cisco SD-WAN Manager management IP port. Default: 8443

Command History

Release	Modification
Cisco SD-WAN Release 20.7.1	This command was introduced.

The following sample output shows the Cisco SD-WAN Manager management IP address and port configurations:

```
Device# request nms server-proxy set management-ip
Enter the vmanage management ip address[127.0.0.1]:127.0.0.1
Enter the vmanage management ip port[8443]:8443
/usr/bin/vconfd_serviceproxy_config.py:177: YAMLLoadWarning: calling yaml.load() without
Loader=... is deprecated, a
s the default Loader is unsafe. Please read https://msg.pyyaml.org/load for full details.
data = yaml.load(fread)
Restarted service proxy for management ip address update
```

request nms server-proxy set ratelimit

To configure rate limits for bulk and non-bulk APIs for a Cisco vManage node or cluster, use the **request nms server-proxy set ratelimit** command in the operational mode.

request nms server-proxy set ratelimit

Syntax Description

This command has no arguments or keywords.

Command Default

The rate limit per node for non-bulk APIs is 100 requests per second.

The rate limit per node for bulk APIs is 48 requests per minute.

For a Cisco vManage cluster, the default rate limit per node is multiplied by the number of nodes. For example, for a three-node cluster, the default rate limit is 144 (48*3) requests per minute across all three nodes.

Command Modes Operational mode (#)

Command History

Release	Modification
Cisco vManage Release 20.10.1	This command is introduced.

Before you configure the rate limit, consider its effect on Cisco vManage resources.

Examples

The following example shows how you can configure the bulk API rate limit for a node. In this example, the rate limit is changed from 48 requests per minute to 50 requests per minute.

```
vManage# request nms server-proxy set ratelimit

Do you want to reconfigure rate limit for URL non bulk api [y/n] : n
Do you want to reconfigure rate limit for URL bulk api /dataservice/data/device/statistics
 [y/n] : y
Enter the PER NODE rate limit for URL bulk api /dataservice/data/device/statistics [48 load
 balanced across all nodes at present] : 50

Enter the rate limit unit (second, minute, hour, day) for URL bulk api
/dataservice/data/device/statistics [minute] : minute

Propagating rate limit update across all nodes. Please wait.
vmanage#
```

The following example shows how you can configure the bulk API rate limit for a cluster from one of the nodes in the cluster. This example shows the configuration of the bulk API rate limit on one of the nodes on a three-node cluster. The existing bulk API rate limit per node is 48 requests per minute, and the bulk API rate limit for the cluster is 144 (48*3) requests per minute. The configuration changes the bulk API rate limit per node to 50 requests per minute and the bulk API rate limit for the cluster to 150 requests per minute.

```
vManage# request nms server-proxy set ratelimit
Do you want to reconfigure rate limit for URL non bulk api [y/n] : n
Do you want to reconfigure rate limit for URL bulk api /dataservice/data/device/statistics
 [y/n] : y
Enter the PER NODE rate limit for URL bulk api /dataservice/data/device/statistics [144
load balanced across all nodes at present] : 50
Enter the rate limit unit (second, minute, hour, day) for URL bulk api
/dataservice/data/device/statistics [minute] : minute
Propagating rate limit update across all nodes. Please wait.
Done. Please restart server-proxy on all nodes using "request nms server-proxy restart"
command.
```

Related Commands

Command	Description
show nms server-proxy ratelimit	Displays rate limits configured on the Cisco vManage server-proxy for bulk and non-bulk APIs.

request on-vbond-controller

Delete the serial number of a vEdge router (on vBond orchestrators only).

request on-vbond-controller delete serial-number *serial-number*

Syntax Description

serial-number	vEdge router serial number to delete.

Command History

Release	Modification
14.1	Command introduced.
16.1	Command modified. on-vbond-vsmart to request on-vbond-controller option added.

request on-vbond-vsmart

Delete the serial number of a vEdge router (on vBond orchestrators only).

Starting with Release 16.1, this command has been renamed to **request on-vbond-controller**.

request on-vbond-vsmart delete serial-number *serial-number*

Syntax Description

serial-number	vEdge router serial number to delete.

Command History

Release	Modification
14.1	Command introduced.

request platform software sdwan bootstrap-config save

To save a bootstrap file to the device bootflash, on Cisco IOS XE Catalyst SD-WAN devices, use **request platform software sdwan bootstrap-config save** in EXEC mode.

request platform software sdwan bootstrap-config save

Command Default

None.

Command Modes

EXEC

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.3.1a	The command was introduced.

Usage Guidelines

To establish connectivity with the Cisco Catalyst SD-WAN controller, a device requires a minimum configuration. In most situations, this minimum bootstrap configuration (MBC) can be provided initially by plug-and-play (PnP). But in some situations, such as in remote sites where it may be preferable not to use PnP, it is helpful to have a saved bootstrap configuration that can connect the device to the controller.

The **request platform software sdwan bootstrap-config save** command saves the device configuration to the bootflash. The command can be used to save the configuration at any time, but it is intended for saving a minimum bootstrap configuration (MBC) file that enables the device to reconnect to the controller in case the full configuration is ever lost or removed.

When setting up a device, add to the configuration the details that are required to connect to the controller, and use this command to save the MBC. The file is saved to this location:

bootflash:/ciscosdwan.cfg

Example

The following example shows the command execution and output.

```
Device#request platform software sdwan bootstrap-config save
Saving bootstrap file 'bootflash:/ciscosdwan.cfg'...
Done
```

request port-hop

Manually rotate to the next OMP port in the group of preselected OMP port numbers when a connection cannot be established, and continue the port hopping until a connection can be established (on vEdge routers only). Each connection attempt times out in about 60 seconds.

One case to issue this command is when NAT entries become stale.

request port-hop color *color*

Syntax Description

color	Color of an individual WAN transport interface. Values: 3g, biz-internet, blue, bronze, custom1, custom2, custom3, default, gold, green, lte, metro-ethernet, mpls, private1, private2, private3, private4, private5, private6, public-internet, red, and silver

Command History

Release	Modification
15.3.1	Command introduced.

Example

Request port hopping on TLOCs whose color is **lte**:

```
vEdge# request port-hop color lte vEdge#
```

Related Topics

port-hop
port-offset
show omp tlocs, on page 362

request reset configuration

Reset the device configuration to the factory-default configuration. This command reboots the device.

The configuration reset is reported in the output of the **show reboot history** command.

Command Hierarchy

request reset configuration

Command History

Release	Modification
15.4	Command introduced.

Examples

The following example shows the running configuration on vEdge:

```
vEdge# show running-config
system
 host-name         ve100
 system-ip         172.16.255.30
 site-id           102
 organization-name "Cisco, Inc."
 no track-transport
 clock timezone America/Los_Angeles
 vbond 10.1.14.14
 aaa
  auth-order local radius tacacs
  usergroup basic
   task system read write
   task interface read write
  !
  usergroup netadmin
  !
  usergroup operator
   task system read
   task interface read
   task policy read
   task routing read
   task security read
  !
  user admin
   password $1$ufgUundA$0D2MxOsGlNqp/hcGPQ.51.
  !
 !
 logging
  disk
   enable
  !
 !
 archive
  path     scp://user@192.168.15.1:~/user/ve100
  interval 1440
  vpn      512
 !
```

```
!
bridge 1
 interface ge0/0
  no native-vlan
  no shutdown
 !
 interface ge0/2
  no native-vlan
  no shutdown
 !
 interface ge0/3
  no native-vlan
  no shutdown
 !
!
omp
 no shutdown
 graceful-restart
 advertise connected
!
security
 ipsec
  rekey               172800
  replay-window       4096
  authentication-type none ah-sha1-hmac sha1-hmac
 !
!
vpn 0
 interface ge0/0
  no poe
  autonegotiate
  no shutdown
 !
 interface ge0/1
  ip address 10.1.30.15/24
  tunnel-interface
   encapsulation ipsec
   allow-service dhcp
   allow-service dns
   allow-service icmp
   no allow-service sshd
   no allow-service ntp
   no allow-service stun
  !
  mtu           1600
  autonegotiate
  no shutdown
 !
 interface ge0/2
  autonegotiate
  no shutdown
 !
 interface ge0/3
  autonegotiate
  no shutdown
 !
 interface ge0/4
  ip address 1.0.4.1/24
  autonegotiate
  no shutdown
 !
 ip route 0.0.0.0/0 10.1.30.113
!
vpn 1
```

```
 interface irb1
  ip address 20.1.1.15/24
  autonegotiate
  no shutdown
 !
!
vpn 512
 interface mgmt0
  ip address 192.168.15.78/24
  autonegotiate
  no shutdown
 !
 ip route 0.0.0.0/0 192.168.15.1
!

vEdge# request reset configuration
Are you sure you want to reset to default configuration? [yes,NO] yes

Broadcast message from root@vEdge (console) (Mon Apr 24 17:52:33 2017):

Mon Apr 24 17:52:33 PDT 2017: The system is going down for reboot NOW!

shell# ssh vEdge
Last login: Tue Apr 25 00:52:16 2017 from 10.0.1.1
Welcome to Cisco SD-WAN CLI
admin connected from 10.0.1.1 using ssh on vEdge
vEdge# show running-config
omp
 no shutdown
!
system
aaa
  auth-order local radius
  usergroup basic
   task system read write
   task interface read write
  !
  usergroup netadmin
  !
  usergroup operator
   task system read
   task interface read
   task policy read
   task routing read
   task security read
  !
  user admin
   password $1$OFJrA0HM$IFekE/.08fNJzhJdJHSqt0
  !
!
logging
  disk
   enable
  !
 !
!
vpn 0
 interface ge0/0
  shutdown
 !
 interface ge0/1
  shutdown
 !
 interface ge0/2
  shutdown
```

```
 !
 interface ge0/3
  shutdown
 !
 interface ge0/4
  shutdown
 !
 interface ge0/5
  shutdown
 !
 interface ge0/6
  shutdown
 !
 interface ge0/7
  shutdown
 !
!
vpn 512
 interface eth0
  ip dhcp-client
  no shutdown
 !
!
```

Related Topics

show reboot history, on page 422

request reset logs

Clear the contents of all syslog logging files on the local device (on vEdge routers and vSmart controllers only). This operation also clears the contents of the WTMP file, which records all login and logout events that have occurred on the device. Resetting the logs does not require the device to be rebooted.

Command Hierarchy

request reset logs

Command History

Release	Modification
15.4	Command introduced.

Examples

The following example clears the syslog logging files on the vEdge device:

```
vEdge# file show /var/log/console-log
No license at startup, please load a valid licence.
licence error, could not read hardware identifier v4
licence error, could not read hardware identifier v5
...
vEdge# request reset logs
vEdge# show /var/log/console-log
vEdge#
```

Related Topics

file list, on page 79
file show, on page 80
job stop, on page 83
logging disk
logging server
monitor start, on page 85
monitor stop, on page 86
show jobs, on page 325
show logging, on page 329

request sla-dampening-reset color

To reset dampening on a tunnel for a color, use the **request sla-dampening-reset color** command in privileged EXEC mode.

Syntax

request sla-dampening-reset color *color*

Syntax Description

color *color*	Specifies an identifier for the transport tunnel for data traffic moving between vEdge routers. The color identifies a specific WAN transport provider. The following are the color values: **3g**, **biz-internet**, **blue**, **bronze**, **custom1**, **custom2**, **custom3**, **default**, **gold**, **green**, **lte**, **metro-ethernet**, **mpls**, **private1** through **private6**, **public-internet**, **red**, **silver** Default: **default**

Command History

Release	Modification
20.5.1	This command is introduced.

Example

The following example resets dampening on a tunnel for the public-internet color:

```
vEdge (config)# bfd app-route
vEdge (config)# bfd app-route poll-interval 60000
vEdge (config-bfd)# bfd app-route multiplier 3
vEdge (config)# bfd app-route color public-internet
vEdge (config-color-public-internet)# sla-damp-multipler 60
vEdge (config-color-public-internet)# exit
```

```
vEdge (config-color-public-internet)# exit
vEdge# request sla-dampening-reset color public-internet
```

request root-ca-crl

To install a file that contains the root certificate authority Certificate Revocation List (CRL), use the **request root-ca-crl install** command in privileged EXEC mode.

To uninstall a file that contains the root certificate authority CRL, use the **request root-ca-crl uninstall** command in privileged EXEC mode.

request root-ca-crl install *filename* [**vpn** *vpn-id*]

request root-ca-crl uninstall

Syntax Description

install *filename*	Installs the specified file that contains the root certificate authority CRL.
vpn *vpn-id*	Specifies the VPN in which the CRL file is located.
uninstall	Uinstalls the file that contains the root certificate authority CRL from the device.

Command Modes

Privileged EXEC

Command History

Release	Modification
Cisco SD-WAN Release 20.7.1	This command was introduced.

Usage Guidelines

- The file that contains the root certificate authority CRL is installed in the /usr/share/viptela/root-ca.crl directory in the device. The file can be in the home directory in your local device, or in a remote device that can be reached through FTP, HTTP, SCP, or TFTP. If you are using SCP, you are prompted for the directory name and filename. No file path name is provided.
- When you include the VPN option, one of the interfaces in the specified VPN is used to retrieve the file that contains the root certificate authority CRL. You can omit this option for a Cisco Catalyst SD-WAN Controller because its interfaces are only in VPN 0, which is the VPN that is reserved for the control plane, and Cisco Catalyst SD-WAN Controller images are always retrieved from VPN 0.

Examples

The following example shows how to install the master_root.crl file:

```
vEdge # request root-ca-crl install /home/admin/master_root.crl
Uploading root-ca-crl via VPN 0
Copying /home/admin/master_root.crl to /tmp/vconfd/root-ca.crl.tmp via VPN 0
install_crl new_crl /tmp/vconfd/root-ca.crl.tmp destination_crl /usr/share/viptela/root-ca.crl
send_install_crl_notification
```

The following example shows how to uninstall installs the master_root.crl file:

```
vEdge # request root-ca-crl uninstall
Setting root-ca-crl-installed to false
send_uninstall_crl_notification
Successfully uninstalled the root CA CRL
```

request root-cert-chain

Install or uninstall a file containing the root certificate key chain.

Command Hierarchy

request root-cert-chain install *filename* [**vpn** *vpn-id*]

request root-cert-chain uninstall

Syntax Description

install *filename*	Install the specified file containing the root certificate chain The file can be in a your home directory on the local device, or it can be on a remote device reachable through FTP, HTTP, SCP, or TFTP. If you are using SCP, you are prompted for the directory name and filename. No file path name is provided.
vpn *vpn-id*	VPN in which the certificate file is located. When you include this option, one of the interfaces in the specified VPN is used to retrieve the file. The interfaces on a vSmart controller are only in VPN 0, the VPN reserved for the control plane, so you can omit this option because vSmart images are always retrieved from VPN 0.
uninstall	Uninstall the file containing the root certificate key chain from the Cisco vEdge device.

Command History

Release	Modification
14.1	Command introduced.

request security ipsec-rekey

Force IPsec to generate new keys (on vEdge routers only). Use this command when the IPsec keys have been compromised. After you issue this command, the old key continues to be used until it times out.

Command Hierarchy

request security ipsec-rekey

Command History

Release	Modification
14.2	Command introduced.

Examples

In this example, the SPIs (keys) for TLOC 172.16.255.15 change from 256 and 257 to 257 and 258:

```
vEdge# show tunnel local-sa
TLOC ADDRESS     TLOC COLOR       SPI     IP              PORT    KEY HASH
```

```
-------------------------------------------------------------------------------
172.16.255.15    lte             256     10.1.15.15       12346   *****b93a
172.16.255.15    lte             257     10.1.15.15       12346   *****b93a

vEdge# request security ipsec-rekey

vEdge# show tunnel local-sa
TLOC ADDRESS     TLOC COLOR      SPI     IP               PORT    KEY HASH
-------------------------------------------------------------------------------
172.16.255.15    lte             257     10.1.15.15       12346   *****b93a
172.16.255.15    lte             258     10.1.15.15       12346   *****a19d
```

Related Topics

rekey
show bfd sessions, on page 187
show ipsec inbound-connections, on page 311
show ipsec local-sa, on page 312
show ipsec outbound-connections, on page 313

request software activate

Activate a software image on the local Cisco SD-WAN device (on vEdge routers and vSmart controllers only). Starting from Release 15.4, this command replaces the **reboot other-boot-partition** command.

Command Hierarchy

request software activate *software-image* [**clean**] [**now**]

Syntax Description

now	Activate the specified software image immediately, with no prompt asking you to confirm that you want to activate. **Note** Beginning with Cisco IOS XE Catalyst SD-WAN Release 17.14.1a, this option is no longer supported.
clean	Activate the specified software image, but do not associate the existing configuration file, and do not associates any files that store information about the device history, such as log and trace files, with the newly activated software image. **Note** Beginning with Cisco IOS XE Catalyst SD-WAN Release 17.10.1a, this option is no longer supported.
software-image	Name of the software image to activate on the device.

Command History

Release	Modification
15.3.3	Command introduced for vEdge 100 routers.
15.4	Command supported on all vEdge routers and vSmart controllers.

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.10.1a	The **clean** option is no longer supported.
Cisco IOS XE Catalyst SD-WAN Release 17.14.1a	The **now** option is no longer supported.

Examples

The following example activates a software image:

```
vEdge# request software activate 15.3.3
This will reboot the node with the activated version.
Are you sure you want to proceed? [yes,NO]
```

Related Topics

request download, on page 110
request software install-image, on page 145
request software remove, on page 146
request software reset, on page 147
request software secure-boot, on page 148
request software set-default, on page 149
request software verify-image, on page 151
show software, on page 446
show version, on page 476

request software install

Download, install, and activate a software image on the Cisco SD-WAN device (on all devices except vEdge 100 routers). Before the software is installed, the software image is verified to determine that it is valid and that it has been signed. If the verification process fails, the software image installation is not performed.

Command Hierarchy

request software install *filename* [**download-timeout** *minutes*] [**reboot** [**no-sync**]] [**vpn** *vpn-id*]

Syntax Description

download-timeout*minutes*	Specifies the installation timeout value. How long to wait before canceling requests to install software. The duration ranges from 1 through 1440 minutes (24 hours). The default time is 60 minutes.

filename	Install the software image in specified filename. The file can be in your home directory on the local device, or it can be on a remote device reachable through FTP, HTTP, SCP, or TFTP. If you are using SCP, you are prompted for the directory name and filename. No file path name is provided. For a vEdge router, filename has the format `SD-WAN-release-number-mips64.tar.bz2` (this image includes both the vEdge and the software for a hardware-based vBond orchestrator). For a vSmart controller and software-based vBond orchestrator, filename has the format `SD-WAN-release-number-x86_64.tar.bz2`. For a vManage NMS, filename has the format `vmanage-release-number-x86_64.tar.bz2`. In all the image names, the release number consists of the last two digits of the release year and a number that indicates which release it is in that year. An example of a vEdge image name is `SD-WAN-16.1-mips64.tar.bz2`, for the first image released in 2016. When you upgrade the software on a vManage NMS, you should back up the vManage storage partition before performing the upgrade. See Restore the vManage NMS .
rebootno-sync	Reboot the device after installation of the software image completes. By default, the device's current configuration is copied to the other hard-disk partition and is installed with the new software image. If you include the **no-sync** option, the software is installed in the other hard-disk partition, and it is installed with the factory-default configuration. The existing configuration and any files that store information about the device history, such as log and trace files, are not copied to the other partition. Effectively, the **no-sync** option restores the device to its initial factory configuration.
vpn *vpn-id*	VPN in which the image is located. When you include this option, one of the interfaces in the specified VPN is used to retrieve the software image. The interfaces on a vSmart controller are only in VPN 0, the VPN reserved for the control plane, so you can omit this option because vSmart images are always retrived from VPN 0.

Command History

Release	Modification
14.1	Command introduced.
14.2	**no-sync** option added.
15.3.5	**download-timeout** option and prompt for backing up vManage database are added.
16.1	Support for signed images and image verification added.

Examples

To upgrade the software on a vManage NMS:

```
vEdge# request software install /home/admin/vmanage-15.2.0-x86_64.tar.bz2 reboot
It is recommended that you back up the vManage storage partition before upgrade. Proceed
with upgrade? [y/n]: n
vManage storage partition not backed up. Stopping upgrade.
vManage# request software install /home/admin/vmanage-15.2.0-x86_64.tar.bz2 reboot
It is recommended that you back up the vManage storage partition before upgrade. Proceed
with upgrade? [y/n]: Y
Prompted for vManage storage backup. Proceeding with upgrade
Starting download of image..
Copying file:///home/admin/vmanage-15.2.0-x86_64.tar.bz2via VPN 0
Successfully downloaded /home/admin/vmanage-15.2.0-x86_64.tar.bz2
Validating image /home/admin/vmanage-15.2.0-x86_64.tar.bz2..
Preparing filesystem
Extracting firmware
Creating recovery backup for factory reset
configuring boot-loader
Installation complete
preparing for reboot
```

Related Topics

reboot, on page 94
request software install-image, on page 145
request software secure-boot, on page 148
request software verify-image, on page 151
show boot-partition, on page 198
show software, on page 446

request software install-image

Install a software image on the SD-WAN device (on vEdge routers and vSmart controllers only). Before the software is installed, the software image is verified to determine that it is valid and that it has been signed. If the verification process fails, the software image installation is not performed.

Command Hierarchy

request software install-image *file-system-name*

Syntax Description

Table 1: Syntax Description

file-system-name	Install the software image in the specified file system. The file system must be located on the local device. Use the **request download** command to transfer the image file to the local device.

Command History

Release	Modification
15.3.3	Command introduced for vEdge 100 routers.

Release	Modification
15.4	Support extended on all routers and on vSmart controllers.
16.1	Support for signed images and image verification added.

Related Topics

request download, on page 110
request software activate, on page 142
request software install, on page 143
request software remove, on page 146
request software reset, on page 147
request software secure-boot, on page 148
request software set-default, on page 149
request software verify-image, on page 151
show software, on page 446
show version, on page 476

request software remove

Remove a software image from the local Cisco SD-WAN device (on vEdge routers and vSmart controllers only).

Command Hierarchy

request software remove *file-system-name*

Syntax Description

file-system-name	Name of the software image to delete from the device. You cannot delete the active image.

Command History

Release	Modification
15.3.3	Command introduced for vEdge 100 routers.
15.4	Support extended on all routers and on vSmart controllers.

Examples

Attempt to remove a software image:

```
vEdge# request software remove ?
Description: Display software versions
Possible completions:
  15.3.3
vEdge# request software remove 15.3.3
cannot remove active image
vEdge#
```

Related Topics

request download, on page 110
request software activate, on page 142
request software install-image, on page 145
request software reset, on page 147
request software secure-boot, on page 148
request software set-default, on page 149
show software, on page 446
show version, on page 476

request software reset

Return the Cisco SD-WAN device to the default software image and default configuration. The default is either the factory-default image and configuration or the default image set with the **request software set-default** command.

When you issue this command, all non-default software images are removed from the device. Then, the device reboots with the default image and configuration.

In Releases 15.3 and earlier, this command reformats the boot partition and installs the software image again. During this process, which is very time-consuming, all logs and the configuration are lost. It is recommended that you issue a **request admin-tech** command to collect system-wide information before issuing this command and that you use this command only when you suspect that the filesystem is corrupt.

Command Hierarchy

request software reset

Command History

Release	Modification
14.1	Command introduced.

Examples

After the command completes, you are logged out of the device. You may need to press the Return key to complete the logout process.

```
vEdge# request software reset
Are you sure you want to reset to factory defaults? [yes,NO] yes
Broadcast message from root@vEdge (console) (Mon Apr 24 17:58:08 2017):
Mon Apr 24 17:58:08 PDT 2017: The system is going down for reboot NOW!
my-computer $
```

Related Topics

reboot, on page 94
request admin-tech, on page 97
request download, on page 110
request software activate, on page 142

request software install, on page 143
request software install-image, on page 145
request software remove, on page 146
request software secure-boot, on page 148
request software set-default, on page 149
show software, on page 446
show version, on page 476

request software secure-boot

Check and enforce the secure boot state of the system software images and, for vEdge hardware routers, of the boot loader.

Command Hierarchy

request software secure-boot list request software secure-boot set request software secure-boot status

Syntax Description

request software secure-boot list	Check secure boot state and check whether software images on the device are secure or not secure.
request software secure-boot set	Remove insecure software images from the device and, for vEdge hardware routers, remove an insecure boot loader.
request software secure-boot status	Display the security status of the software images installed on the device.

Command History

Release	Modification
18.3.1	Command introduced.

Examples

```
vEdge# request software secure-boot list
Secure-image check found no insecure software versions
vEdge# request software secure-boot status
Secure-image status: HIGH
```

Related Topics

reboot, on page 94
request software install-image, on page 145
request software install, on page 143
request software verify-image, on page 151
show boot-partition, on page 198
show software, on page 446

request software set-default

Set a software image to be the default image on the device (on vEdge routers and vSmart controllers only). Performing this operation overwrites the factory-default software image, replacing it with an image of your choosing. It is recommended that you set a software image to be the default only after verifying that the software is operating as desired on the device and in your network.

Command Hierarchy

request software set-default *image-name*

Syntax Description

image-name	Name of the software image to designate as the default image on the device.

Command History

Release	Modification
15.3.3	Command introduced for vEdge 100 routers.
15.4	Supported on all routers and on vSmart controllers.

Examples

```
vEdge# request software set-default 15.3.3
This will change the default software version.
Are you sure you want to proceed? [yes,NO] yes
vEdge#
```

Related Topics

request download, on page 110
request software activate, on page 142
request software install, on page 143
request software remove, on page 146
request software reset, on page 147
request software secure-boot, on page 148
show software, on page 446
show version, on page 476

request software upgrade-confirm

Confirm that the upgrade to a new software image is successful. If the device configuration includes the **system upgrade-confirm** command, issuing the **request software upgrade-confirm** command within the time limit configured in the **upgrade-confirm** command confirms that the upgrade to the new software image has been successful. If this command is not issued, the device reverts automatically to the previously running software image.

If you have initiated the software upgrade from the vManage NMS, the vManage NMS automatically issues the **request software upgrade-confirm** command when the vEdge router finishes rebooting. If you have initiated the software upgrade manually from the vEdge router, you issue this command from the CLI.

Command Hierarchy

request software upgrade-confirm

Command History

Release	Modification
15.1	Command introduced.
15.2	Command support added for vBond orchestrator, vManage NMS, and vSmart controller.
15.4	Command renamed from **request upgrade-confirm**.

Examples

Configure an upgrade confirm time limit of 5 minutes, upgrade the software manually from the vEdge router CLI, and confirm that the upgrade has been successful:

```
vEdge# config
vEdge(config)# system upgrade-confirm 5
vEdge(system)# u
vEdge# request software install viptela-15.1.mips64.tar.bz2 reboot
[Software is installed, and router reboots and restarts.]
user$ ssh -l admin vEdge
Software upgrade completed. Device will revert to previous software version in '300' seconds
 unless confirmed.
Execute "request software upgrade-confirm" to confirm the upgrade.
vEdge#
[Less than 5 minutes elapse.]
vEdge# request software upgrade-confirm
Software upgrade confirmed.
vEdge#
```

Configure an upgrade confirm time limit of 5 minutes, upgrade the software, and log back in to the router, but do not confirm that the upgrade has been successful:

```
vEdge# config
vEdge(config)# system upgrade-confirm 5
vEdge(system)# commit and-quit
vEdge# request software install viptela-15.1.mips64.tar.bz2 reboot
[Software is installed, and router reboots and restarts.]
user$ ssh -l admin vEdge
Software upgrade completed. Device will revert to previous software version in '300' seconds
 unless confirmed.
Execute "request software upgrade-confirm" to confirm the upgrade.
vEdge#
[More than 5 minutes elapse.]
Software upgrade not confirmed. Device will revert to previous software version.
vEdge#
```

Related Topics

request software install, on page 143

upgrade-confirm

request software verify-image

Verify that a Cisco SD-WAN software image is valid and has been signed.

It is recommended that you issue a **request software install** or **request software install-image** command, or that you install device software from the vManage NMS, rather than using the request software verify-image command. Both these commands, as well as the vManage NMS image installation and upgrade processes, verify that the image is valid and has been signed before they install the software. If the verification process fails, the software image installation is not performed.

Command Hierarchy

request software verify-image *filename*

Syntax Description

filename	Name of the Cisco SD-WAN software image file. This file is a compressed tar file (`filename extension tar.gz`) on the local device. The tar file names have the following format, where x.x.x represents the release version: • `vEdge router—viptela-x.x.x-mips64.tar.gz` • `vBond and vSmart—viptela-x.x.x86_64.tar.gz` • `vManage—vmanage-x.x.x86_64.tar.gz`

Command History

Release	Modification
16.1	Command introduced.

Example

```
vManage# request software verify-image vmanage-16.1.0-x86_64.tar.gz
verify OK
Signature verified for rootfs.img
Signature verified for vmlinuz
vManage#
```

Related Topics

request download, on page 110
request software activate, on page 142
request software install, on page 143
request software install-image, on page 145
request software remove, on page 146
request software reset, on page 147
request upload, on page 153

request stream capture

To debug issues related to loss of connectivity between Cisco vEdge devices and Cisco vManage, use the **request stream capture** command in privileged EXEC mode.

request stream capture { **enable** | **disable** | **abort** } { **control** | **data** } **vpn** *vpn-id* **interface** *interface-name* **session-id** *session-id* [**dst-ip** *ip-address* | **dst-port** *port* | **src-ip** *ip-address* | **src-port** *port* | **protocol** *number*]

Syntax Description

enable	Enables capturing data stream.
disable	Disables capturing data stream.
abort	Terminates the data stream capturing process.
data	Captures data stream for the data plane.
control	Captures data stream information for the control plane.
vpn-id *vpn-id*	VPN ID to capture the data stream details for.
interface *interface-name*	Interface to capture data stream details for.
session-id*session-id*	Session ID to capture the data stream details for.
dst-ip *ip-address*	(Optional) Destination IP address to capture the data stream details for.
dst-port *port*	(Optional) Destination port to capture the data stream details for.
src-ip *ip-address*	(Optional) Source IP address to capture the data stream details for.
src-port *port*	(Optional) Source port to capture the data stream details for.
protocol *number*	(Optional) Valid protocol number Range: 0 to 255

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco SD-WAN Release 20.6.1	This command was introduced.

Usage Guidelines

The parameters in this command syntax can be configured in any order.

Example

The following example shows how to enable stream capture for the specified details.

```
Device# request stream capture enable vpn1 interface ipsec1 data session-id s123
```

request upload

Upload a file from the Cisco SD-WAN device to another device in the network (on vEdge routers and vSmart controllers only).

Command Hierarchy

request upload [**vpn** *vpn-id*] *destination filename*

Syntax Description

filename	Name of file on the local SD-WAN device to upload to a remote device. If the file is not in your home directory, specify the full path.
destination	Remote device. It must be reachable through FTP, HTTP, SCP, or TFTP. If you are using SCP, you are prompted for the directory name and filename; no file path name is provided.
vpn *vpn-id*	VPN in which the remote device containing the file to be downloaded is located. When you include this option, one of the interfaces in the specified VPN is used to retrieve the software image.

Command History

Release	Modification
15.3.3	Command introduced for vEdge 100 routers only.
15.4	Command supported on all vEdge routers and on vSmart controllers.

Related Topics

request download, on page 110
request software activate, on page 142
request software install, on page 143
request software install-image, on page 145
request software remove, on page 146
request software reset, on page 147
show software, on page 446

request vedge

Add a vEdge serial number–chassis number pair to or delete a vEdge serial number-chassis number pair from the vEdge authorized serial number file on the local device.

Comamnd Hierarchy

request vedge [**add** | **delete**] **serial-num** *number* **chassis-num** *number*

Syntax Description

addserial-num *number* **chassis-num** *number*	Add vEdge Serial and Chassis Numbers. Add the specified vEdge serial and chassis number pair to the vEdge authorized serial number file on the local device.
deleteserial-num *number* **chassis-num** *number*	Delete vEdge Serial and Chassis Number. Remove the specified vEdge serial and chassis number from the vEdge authorized serial number file on the local device.

Command History

Release	Modification
14.1	Command introduced.

Related Topics

request vsmart add serial-num, on page 155
request vsmart-upload serial-file, on page 156
show control valid-vedges, on page 240
show control valid-vsmarts, on page 241
show orchestrator valid-vedges, on page 378
show orchestrator valid-vsmarts, on page 379

request vedge-cloud activate

Activate a vEdge Cloud router in the overlay network (on vEdge Cloud routers only). Before you can use this command, you must configure the organization name and the vBond orchestrator's IP address or DNS name on the vEdge Cloud router.

Command Hierarchy

request vedge-cloud activate chassis-number *number* **token** *token*

Syntax Description

chassis-number *number*	Chassis number of the vEdge Cloud router. To obtain the chassis number (UUID) in vManage NMS, select the Configuration > Devices screen. In the vEdge List, locate the Chassis Number column. If the router is not listed in the vEdge List, click Upload vEdge List to upload the serial number file that contains the vEdge Cloud router's information.
token *token*	Token identifier of the vEdge Cloud router. To obtain the token in vManage NMS, select the Configuration > Devices screen. In the vEdge List, locate the Serial No./Token column. If the router is not listed in the vEdge List, click Upload vEdge List to upload the serial number file that contains the vEdge Cloud router's information.

Command History

Release	Modification
17.1	Command introduced.

request vsmart add serial-num

Send the certificate serial number of a vManage NMS or a vSmart controller to the vBond orchestrator. If your network does not have a vManage NMS and you reboot the vSmart controller, the serial numbers sent with this command are lost. To have the vSmart controller retain the certificate serial numbers, use the **request vsmart-upload** command instead.

Starting in Release 15.4, this command is replaced by the **request controller add** command.

Command Hierarchy

request vsmart add serial-num *number*

Syntax Description

serial-num *number*	Certificate serial number to send to the vManage or vSmart controller.

Command History

Release	Modification
14.1	Command introduced.
15.4	Command is replaced by the **request controller add**.

Related Topics

request vedge, on page 153
request vsmart delete serial-num, on page 155
request vsmart-upload serial-file, on page 156
show control valid-vedges, on page 240
show control valid-vsmarts, on page 241
show orchestrator valid-vedges, on page 378
show orchestrator valid-vsmarts, on page 379

request vsmart delete serial-num

Delete a vSmart serial number from the vSmart controller serial number file on the local device. Starting in Release 15.4, this command is replaced by the **request controller delete serial-num** command.

Command Hierarchy

request vsmart delete serial-num *number*

Syntax Description

Table 2: Syntax Description

number	vSmart serial number to delete from the vSmart serial number file on the local device.

Command History

Release	Modification
14.1	Command introduced.
15.4	Command replaced by **request controller delete serial-num** command.

Related Topics

request vedge, on page 153
request vsmart add serial-num, on page 155
request vsmart-upload serial-file, on page 156
show control valid-vedges, on page 240
show control valid-vsmarts, on page 241
show orchestrator valid-vedges, on page 378
show orchestrator valid-vsmarts, on page 379

request vsmart-upload serial-file

Upload the certificate serial number file to the local device (on vBond orchestrators and vManage NMSs only). The local device retains these serial numbers even after you reboot it. Starting in Release 15.4, this command is replaced by **request controller-upload serial-file** command.

Command Hierarchy

request vsmart-upload serial-file *filename* [**vpn** *vpn-id*]

Syntax Description

request vsmart-upload serial-file *filename*	Name of Certificate File. Install the specified file containing the list of serial numbers for the vSmart controllers and the vManage NMSs in the network. The file can be in a your home directory on the local device, or it can be on a remote device reachable through FTP, HTTP, SCP, or TFTP. If you are using SCP, you are prompted for the directory name and filename. No file path name is provided.
vpn *vpn-id*	Specific VPN in which the file is located. When you include this option, one of the interfaces in the specified VPN is used to retrieve the file. The interfaces on a vSmart controller are only in VPN 0, the VPN reserved for the control plane, so you can omit this option because vSmart images are always retrieved from VPN 0.

Command History

Release	Modification
14.1	Command introduced.
15.4	Command replaced by **request controller-upload serial-file** command.

Related Topics

request vsmart add serial-num, on page 155
request vsmart delete serial-num, on page 155

screen-length

Set the length of the terminal window. For most Cisco SD-WAN software commands, the output is rendered automatically either by the CLI or by templates that format the output. For these commands, any value that you set for screen-length command has no effect. Use the **more** and **nomore** command filters to control the length of the output.

Command Hierarchy

screen-length *number*

Syntax Description

screen-length *number*	Set the length of the terminal screen. Number can be a value from 0 through 256. When you set the screen length to 0, the CLI does not paginate command output.

Command History

Release	Modification
14.1	Command introduced.

Example

```
vEdge# screen-length 24
vEdge#
```

Related Topics

screen-width, on page 157
show cli, on page 217

screen-width

Set the width of the terminal window. For most Cisco SD-WAN software commands, the output is rendered automatically either by the CLI or by templates that format the output. For these commands, any value that you set for **screen-width** command has no effect. Use the **tab** and **notab** command filters to control the width of the output.

Command Hierarchy

screen-width *number*

Syntax Description

screen-width *number*	Set the width of the terminal screen. Number can be a value from 20 through 256.

Command History

Release	Modification
14.1	Command introduced.

Example

```
vEdge# screen-width 80
vEdge#
```

Related Topics

screen-length, on page 157
show cli, on page 217

show aaa usergroup

show aaa usergroup—List the groups configured for AAA role-based access to a Cisco vEdge device.

Command Syntax

show aaa usergroup

show aaa usergroup task [**permission** (**read** | **write**)]

show aaa usergroup users *username*

vManage Equivalent

For all Cisco vEdge devices:

Administration ► Manage Users

Syntax Description

show aaa usergroup	All Usergroups, Users, Tasks, and Permissions: List all configured usergroups, the users in those groups, and the task permissions that each group has.
show aaa usergroup task [permission (**read** | **write**)]	All Usergroups, Tasks, and Permissions: List all configured usergroups and the task permissions that each group has.
show aaa usergroup users *username*	Usergroup Information for a User: For the specified user, list the group they are in and that group's task permissions.

Command History

Release	Modification
14.1.	Command introduced.

Examples

Show aaa usergroup

```
vEdge# show aaa usergroup
GROUP     USERS  TASK       PERMISSION
----------------------------------------
basic     -      system     read write
                 interface  read write
admin     admin  system     read write
                 interface  read write
                 policy     read write
                 routing    read write
                 security   read write
operator  eve    system     read
                 interface  read
                 policy     read
                 routing    read
                 security   read

vEdge# show aaa usergroup task
GROUP     TASK       PERMISSION
---------------------------------
basic     system     read write
          interface  read write
admin     system     read write
          interface  read write
          policy     read write
          routing    read write
          security   read write
operator  system     read
          interface  read
          policy     read
          routing    read
          security   read

vEdge# show aaa usergroup users eve
GROUP     USERS  TASK       PERMISSION
----------------------------------------
operator  eve    system     read
                 interface  read
                 policy     read
                 routing    read
                 security   read
```

Related Topics

aaa

show alarms

To view alarms history and view the watermarks configured for CPU, memory, and disk usage, and the disk read and write speeds, use the **show alarms** command in the operational mode.

show alarms { **cpu-usage** | **history** | **memory-usage** | **disk-usage** | **disk-speed** }

Syntax Description

cpu-usage	Shows configured CPU-usage watermarks.
history	Shows the history of alarms. The following options are available: • **from**: Displays alarms from timestamp (YYYY-MM-DDTHH:MM:SS) • **last-n**: Displays last-n alarms (default: 25) • **severity**: Shows alarms matching severity • **skip-type**: Skips displaying alarms matching type • **to**: Displays alarms till timestamp (YYYY-MM-DDTHH:MM:SS) • **type**: Shows alarms matching type
memory-usage	Shows configured memory-usage watermarks.
disk-usage	Shows configured disk-usage watermarks.
disk-speed	Shows configured watermarks for disk read and write speeds. **Note** Watermarks for disk read and write speeds can only be configured in a Cisco vManage server.

Command Modes

Operational mode (#)

Command History

Release	Modification
Cisco SD-WAN Release 20.7.1	This command is introduced.

Examples

The following is a sample output of the **show alarms cpu-usage** command:

```
Device# show alarms cpu-usage

            HIGH        MEDIUM      LOW
            WATERMARK   WATERMARK   WATERMARK
CPU USAGE   PERCENTAGE  PERCENTAGE  PERCENTAGE  INTERVAL
-----------------------------------------------------------------
cpu-usage   80          70          50          10
```

The following is a sample output of the **show alarms history** command:

```
Device# show alarms history
DATE  TIME       TYPE                                SEVERITY   DETAILS

--------------------------------------------------------------------------------
```

```
03/10 11:01:35   cpu-usage                              minor      warning:System cpu usage
back to normal level cpu-user-percentage:6.50 cpu-system-pe
rcentage:47.50 cpu-idle-percentage:46.00

03/10 11:01:33   system-reboot-issued                   major      reboot-reason:Initiated by
 user - activate 10.8.0-71
03/10 11:01:27   control-connection-state-change     major      personality:vedge
peer-type:vmanage peer-system-ip:10.168.1.197 peer-vmanage-system
-ip:0.0.0.0 public-ip:10.130.130.4 public-port:23756 src-color:biz-internet
remote-color:default uptime:0:00:00:35 new-state:down
03/10 11:01:27   control-connection-state-change     major      personality:vedge
peer-type:vsmart peer-system-ip:10.168.1.195 peer-vmanage-system-
ip:0.0.0.0 public-ip:10.130.130.3 public-port:12446 src-color:biz-internet
remote-color:biz-internet uptime:0:00:00:34 new-state:down
03/10 11:01:27   control-no-active-vsmart            critical   personality:vedge
```

The following is a sample output of the **show alarms memory-usage** command:

```
Device# show alarms memory-usage

              HIGH         MEDIUM       LOW
              WATERMARK    WATERMARK    WATERMARK
MEMORY USAGE  PERCENTAGE   PERCENTAGE   PERCENTAGE   INTERVAL
-----------------------------------------------------------------
memory-usage  80           70           50           10
```

The following is a sample output of the **show alarms disk-usage** command:

```
Device# show alarms disk-usage

             HIGH          MEDIUM        LOW
FILESYSTEM   WATERMARK     WATERMARK     WATERMARK
PATH         PERCENTAGE    PERCENTAGE    PERCENTAGE   INTERVAL
-----------------------------------------------------------------
/rootfs.rw    90            75            60           5
/tmp          90            75            60           5
/opt/data     80            70            50           10
```

The following is a sample output of the **show alarms disk-speed** command:

```
vManage# show alarms disk-speed

                        READ                    WRITE       WRITE
            READ HIGH   MEDIUM      READ LOW    HIGH        MEDIUM      WRITE LOW
            WATERMARK   WATERMARK   WATERMARK   WATERMARK   WATERMARK   WATERMARK
DISK PATH   K BPS       K BPS       K BPS       K BPS       K BPS       K BPS       INTERVAL
-------------------------------------------------------------------------------------------
/dev/sda2   1000        500         100         1000        500         100         100
```

Related Commands

Command	Description
cpu-usage	Configures CPU-usage watermarks and polling interval.
memory-usage	Configures memory-usage watermarks and polling interval.
disk-usage	Configures disk-usage watermarks and polling interval.
disk-speed	Configures watermarks for the disk read and write speeds for disk partitions on a Cisco vManage server.

show app cflowd collector

show app cflowd collector—Display information about the configured cflowd collectors that the vEdge router has learned from a vSmart controller (on vEdge routers only).

Command Syntax

show app cflowd collector

vManage Equivalent

For vEdge routers only:

Monitor ► Network ► Application ► Flows

Syntax Description

None

Command History

Release	Modification
14.3.	Command introduced.

Examples

Show app cflowd collector

```
vEdge# show app cflowd collector

      COLLECTOR
VPN   IP          COLLECTOR  CONNECTION            IPFIX    CONNECTION  TEMPLATE  DATA
ID    ADDRESS     PORT       STATE       PROTOCOL  VERSION  RETRY       PACKETS   PACKETS
-------------------------------------------------------------------------------------
1024  10.20.7.1   18004      true        TCP       10       1           2         0
1024  10.20.7.1   18003      true        TCP       10       1           2         0
1024  10.20.7.1   18002      true        TCP       10       1           2         0
1024  10.20.7.1   18001      true        TCP       10       1           2         0
```

Related Topics

cflowd-template
clear app cflowd flows, on page 12
clear app cflowd statistics, on page 13
show app cflowd flow-count, on page 163
show app cflowd flows, on page 164
show app cflowd statistics, on page 166
show app cflowd template, on page 167
show policy from-vsmart, on page 409

show app cflowd flow-count

show app cflowd flow-count—Display the number of current cflowd traffic flows (on vEdge routers only).

Command Syntax

show app cflowd flow-count

vManage Equivalent

For vEdge routers only:

Monitor ► Network ► Real Time ► App Log Flow Count

Syntax Description

Syntax Description

None

Command History

Release	Modification
14.3.	Command introduced.

Examples

Show app cflowd flow-count

```
vEdge# show app cflowd flow-count

VPN  count
------------
1    502
2    452
3    502
4    502
5    502
6    502
7    502
8    502
9    502
10   502
```

Related Topics

cflowd-template
clear app cflowd flows, on page 12
clear app cflowd statistics, on page 13
show app cflowd collector, on page 162
show app cflowd flows, on page 164
show app cflowd statistics, on page 166
show app cflowd template, on page 167

show policy from-vsmart, on page 409

show app cflowd flows

show app cflowd flows—Display cflowd flow information (on vEdge routers only).

Command Syntax

show app cflowd flows [**vpn** *vpn-id*]

show app cflowd flows [**vpn** *vpn-id*] [*flow-parameter*]

show app cflowd flows vpn *vpn-id* **src-ip** *ip-address* **dest-ip** *ip-address* **src-port** *port-number* **dest-port** *port-number* **dscp** *value*

ip-proto *protocol-number*

vManage Equivalent

For vEdge routers only:

Monitor ► Network ► Real Time ► App Log Flows

Syntax Description

None	None Display cflowd flow information for all flows.
vpn *vpn-id* **src-ip** *ip-address* **dest-ip** *ip-address* **src-port** *port-number* **dest-port** *port-number* **dscp** *value* **ip-proto** *protocol-number*	Flow Key Elements Display cflowd flow information for a specific flow key element. You must specify all the key elements as shown in the syntax and in the order shown in the syntax. You can also just specify all the key elements until the last one that you are interested in, and again you must specify them in the order shown. For example, if you are interested only in filtering on the source and destination ports, you include only the VPN, source and destination addresses, and source and destination ports in the command; you can omit the last two key elements (DSCP and IP protocol). To select all values for a key elements, specify an asterisk (*) as a wildcard in place of the variable; for example, **src-ip ***.

flow-parameter	Flow Parameter: Display the flow that matches the specified flow parameter. These parameters correspond to a number of the column headers in the output of the plain **show app cflowd flows** command. *flow-parameter* can be one of the following: • **egress-intf-name** *interface-name*—Flow's outgoing interface. • **icmp-opcode** *value*—Flow's ICMP operational code. • **ingress-intf-name** *interface-name*—Flow's incoming interface. • **max-length** *bytes*—Maximum IP packet length in the flow. • **min-length** *bytes*—Minimum IP packet length in the flow. • **nhop-ip** *ip-address*—IP address of the flow's next hop. • **start-time** *time*—Flow's start time. • **tcp-cntrl-bits** *bit*—Flow's TCP control bit value. • **time-to-expire** *seconds*—Time until the flow expires. • **total-bytes** *number*—Total number of bytes in the flow. • **total-packets** *number*—Total number of packets in the flow.
vpn *vpn-id*	VPN Display cflowd information for flows in a specific VPN.

Command History

Release	Modification
14.3.	Command introduced.
15.4.	Options for flow parameters and IP address, ports, DSCP, and protocol added.

Examples

Show app cflowd flows

```
vEdge# show app cflowd flows
                                                                TCP                                                                                   TIME
                                     SRC    DEST        IP     CNTRL  ICMP                    TOTAL   TOTAL     MIN  MAX                             TO      EGRESS    INGRESS
    APP
VPN  SRC IP         DEST IP          PORT   PORT   DSCP  PROTO BITS    OPCODE  NHOP IP         PKTS    BYTES     LEN  LEN   START TIME                EXPIRE  INTF NAME  INTF
NAME  ID
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------
100  10.1.111.2     18.100.44.4      12345  6789  0     6      24     0       192.168.10.9   23      1902    70   155   Fri Sep 28 17:44:36 2018  45      ipsec1     ge0/3
     1118
100  18.100.44.4    10.1.111.2       6789   12345 0     6      16     0       10.1.111.2     41      5914    40   1340  Fri Sep 28 17:39:56 2018  43      ge0/3      ipsec1
     1118

vEdge# show app dpi supported-applications | tab | include 1118
apns           application_service  Apple Push Notification Service            Application Service 1118
```

Related Topics

cflowd-template

clear app cflowd flows, on page 12
clear app cflowd statistics, on page 13
show app cflowd collector, on page 162
show app cflowd flow-count, on page 163
show app cflowd statistics, on page 166
show app cflowd template, on page 167
show policy from-vsmart, on page 409

show app cflowd statistics

show app cflowd statistics—Display cflowd packet statistics (on vEdge routers only).

Command Syntax

show app cflowd statistics

Syntax Description

Syntax Description None

Command History

Release	Modification
14.3.	Command introduced.

Examples

Show app cflowd statistics

```
vEdge# show app cflowd statistics

      data_packets             :      47243
      template_packets         :      77
      total-packets            :      47320
      flow-refresh             :      271395
      flow-ageout              :      24203
      flow-end-detected        :      58
      flow-end-forced          :      0
Release Information
```

Related Topics

cflowd-template
clear app cflowd flows, on page 12
clear app cflowd statistics, on page 13
show app cflowd flow-count, on page 163
show app cflowd flows, on page 164
show app cflowd template, on page 167
show policy from-vsmart, on page 409

show app cflowd template

show app cflowd template—Display the cflowd template information that the vEdge router transmits periodically to the cflowd collector (on vEdge routers only).

Command Syntax

show app cflowd template [**name** *template-name*] [**flow-active-timeout**] [**flow-inactive-timeout**] [**template-refresh**]

Syntax Description

None	Options Display information about all the cflowd templates that the vEdge router has learned from a vSmart controller.
nametemplate-name	Specific Template Display information about the named cflowd template.
template-refresh	Template Refresh Values Display the template refresh values for the cflowd templates learned from a vSmart controller.
flow-active-timeout **flow-inactive-timeout**	Timeout Values Display the active or inactive flow timeout values for the cflowd templates learned from a vSmart controller.

Command History

Release	Modification
14.3.	Command introduced.

Examples

Show app cflowd template

```
vEdge# show app cflowd template

app cflowd template name cflowd-server-10
app cflowd template flow-active-timeout 30
app cflowd template flow-inactive-timeout 30
app cflowd template template-refresh 600
```

Related Topics

cflowd-template
clear app cflowd flows, on page 12
clear app cflowd statistics, on page 13

show app cflowd collector, on page 162
show app cflowd flow-count, on page 163
show app cflowd flows, on page 164
show app cflowd statistics, on page 166
show policy from-vsmart, on page 409

show app dpi applications

show app dpi applications—Display application-aware applications running on the vEdge router (on vEdge routers only).

Command Syntax

show app dpi applications [**vpn** *vpn-id*]

Syntax Description

None	List all applications running on the subnets connected to the vEdge router.
vpnvpn-id	Specific VPN List all applications running in the subnets in the specific VPN.

Command History

Release	Modification
15.2.	Command introduced.
17.1.2.	Removed Source IP and Total Flows fields from command output.

Examples

Show app dpi applications

```
vEdge# show app dpi applications
                                                      EXPIRED
VPN  APPLICATION             FAMILY               FLOWS  LAST SEEN                PACKETS
  OCTETS
-------------------------------------------------------------------------------------------
1    dns                      Network Service       25     2017-05-15T14:05:23+00:00  100
     10326
1    google_accounts          Web                   2      2017-05-15T14:04:43+00:00  28
     6520
1    https                    Web                   35     2017-05-15T14:04:43+00:00  1282
     191073
```

Related Topics

app-visibility
clear app dpi all, on page 14
clear app dpi apps, on page 15

clear app dpi flows, on page 16
show app dpi flows, on page 169
show app dpi supported-applications, on page 172

show app dpi flows

show app dpi flows—Display flow information for the application-aware applications running on the vEdge router (on vEdge routers only).

show app dpi flows [**vpn** *vpn-id*] [**detail**]

Syntax Description

None	List all application flows running on the subnets connected to the vEdge router.
detail	Detailed Information Display detailed information about DPI traffic flows, including total packet and octet counts, and which tunnel (TLOC) the flow was received and transmitted on. Tunnels-in refers to packets sent from the device into a tunnel towards remote edge. Tunnels-out refers to packets received on the device from a remote edge. **Note** This command displays all the flow information except for Border Gateway Protocols, Internet Control Message Protocol for IPv4, Internet Control Message Protocol for IPv6, Open Shortest Path First, Multicast Transfer Protocol, and Protocol-Independent Multicast in a policy as they are not supported. These application bypass DPI and matching DPI on the applications do not affect a policy.
source-ip-address	Source IP Address Within a specific VPN, list the applications flows with the specified source IP address.
vpn *vpn-id*	Specific VPN List all application flows running in the subnets in the specific VPN.

Command History

Release	Modification
15.2.	Command introduced.
16.2.	Added **detail** option.

Examples

Show app dpi flows

```
vEdge# show app dpi flows
                                        SOURCE   DEST
```

```
VPN  SRC IP         DST IP         PORT    PORT   PROTOCOL  APPLICATION  FAMILY
  ACTIVE SINCE
-------------------------------------------------------------------------------------------------------------
1    10.0.0.1    10.255.255.254   20581   443    udp       unknown      Standard
 2015-05-04T14:07:46+00:00
1    10.0.0.1    10.255.255.254  55742   5228   tcp       gtalk        Instant Messaging
2015-05-03T21:06:57+00:00
1    10.0.0.1    10.255.255.254   36597   443    tcp       google       Web
 2015-05-04T14:12:43+00:00
1    10.0.0.1    10.255.255.254   36598   443    tcp       google       Web
 2015-05-04T14:12:45+00:00
1    10.0.0.1    10.255.255.254   63665   53     udp       dns          Network Service
 2015-05-04T14:14:40+00:00
1    10.0.0.1    10.255.255.254  40616   443    tcp       https        Web
2015-05-04T14:12:02+00:00
1    10.0.0.1    10.255.255.254  45889   443    tcp       https        Web
2015-05-04T14:14:40+00:00
1    10.0.0.1    10.255.255.254  45903   443    tcp       https        Web
2015-05-04T14:14:40+00:00
1    10.0.0.1    10.255.255.254  10000   10000  udp       sip          Audio/Video
2015-05-03T08:22:51+00:00
1    10.0.0.1    10.255.255.254  51586   22     tcp       ssh          Encrypted
2015-05-04T13:28:03+00:00
```

```
vEdge# show app dpi flows detail
app dpi flows vpn 1 10.0.0.1 10.255.255.254 38967 8002 tcp
application  iperf
family       "Network Management"
starting-application unknown
 starting-family network-service
 sticky false
active-since 2016-05-16T07:52:38+00:00
packets      14500
octets       14321048
tunnels-in 1
  local-tloc 2001:DB8:1::1
  local-tloc color default
  local-tloc encap dtls
  remote-tloc 2001:DB8:1::1
  remote-tloc color default
  remote-tloc encap dtls
  packets    14500
  octets     14321048
  start-time 2016-05-16T07:52:38+00:00
tunnels-out 1
  local-tloc ip ::23
  local-tloc color default
  local-tloc encap dtls
  remote-tloc 2001:DB8:1::1
  remote-tloc color default
  remote-tloc encap dtls
  packets    0
  octets     0
  start-time 2016-05-16T07:52:38+00:00
```

```
Device# show app dpi flows detail
app dpi flows vpn 1 10.0.0.1 10.255.255.254 47011 443 tcp
 application whatsapp
 family instant-messaging
 starting-application unknown
 starting-family network-service
```

```
sticky false
active-since 2021-07-01T18:04:24+00:00
packets 55
octets 9027
tunnels-in 1
 local-tloc TLOC IP 172.31.255.254
 local-tloc color lte
 local-tloc encap ipsec
 remote-tloc TLOC IP 172.31.255.254
 remote-tloc color lte
 remote-tloc encap ipsec
 packets 32
 octets 7140
 start-time 2021-07-01T18:04:24+00:00
tunnels-out 1
 local-tloc ip 172.31.255.254
 local-tloc color lte
 local-tloc encap ipsec
 remote-tloc TLOC IP 172.31.255.254
 remote-tloc color lte
 remote-tloc encap ipsec
 packets 23
 octets 1887
 start-time 2021-07-01T18:04:24+00:00
```

Related Topics

app-visibility
clear app dpi all, on page 14
clear app dpi apps, on page 15
clear app dpi flows, on page 16
show app dpi applications, on page 168
show app dpi supported-applications, on page 172

show app dpi summary statistics

show app dpi summary statistics—Display summary statistics for DPI flows on the vEdge router (on vEdge routers only).

show app dpi summary statistics

Syntax Description

Syntax Description

None

Command History

Release	Modification
15.3.	Command introduced.

Examples

Show app dpi summary statistics

```
vEdge# show app dpi summary statistics
Dpi status               enable
Flows created            16
Flows expired            2
Current flows            11
Peak flows               13
Current rate             7
Peak rate                10
```

Related Topics

app-visibility
clear app dpi apps, on page 15
clear app dpi flows, on page 16
show app dpi applications, on page 168
show app dpi flows, on page 169
show app dpi supported-applications, on page 172

show app dpi supported-applications

show app dpi supported-applications—List all the application-aware applications supported by the SD-WAN software on the vEdge router (on vEdge routers only) .

Command Syntax

show app dpi supported-applications

show app dpi supported-applications | tab

Syntax Description

None	List the application name and its family.
Pipe Output To Tabular Format	Pipe Output To Tabular Format List full information about the application, including its shortened and long name, family shortened and long name, and application identifier number.

Command History

Release	Modification
15.2.	Command introduced.

Usage Guidelines

To understand the applications available for each family, you can use command: **show app dpi supported-applications | inc <app_family>**.

The following example shows the supported application for Web family:

```
vEdge# show app dpi supported-applications | <web>

      APP
APPLICATION  FAMILY              APPLICATION LONG NAME                    FAMILY LONG NAME
     ID
-------------------------------------------------------------------------------------------------

dr           web                 Dr.dk                                    Web
      2043
dv           web                 DV.is                                    Web
      1861
hs           web                 Hs.fi (Helsingin Sanomat)                Web
      2097
ja           web                 Ja.is                                    Web
      1897
mk           web                 Mk.co.kr                                 Web
      1213
mt           web                 mt                                       Web
      1214
nu           web                 Nu.nl                                    Web
      2119
rt           web                 Rt.com                                   Web
      2064
ss           web                 Ss.lv                                    Web
      1943
ts           web                 Ts                                       Web
      2427
tv           web                 Tv.com                                   Web
      1062
vg           web                 Vg.no                                    Web
      2076
wp           web                 Wp.pl                                    Web
      2078
xl           web                 Xl                                       Web
      2190
y8           web                 Y8.com                                   Web
      1758
yr           web                 Yr                                       Web
      2579
17u          web                 17u.com                                  Web
      1341
24h          web                 24h.com.vn                               Web
      1820
2ch          web                 2ch.net                                  Web
      1316
```

Examples

Display abbreviated application information:

Show app dpi supported-applications

```
vEdge# show app dpi supported-applications

APPLICATION               FAMILY
-----------------------------------------------------
ah                        network_service
dr                        web
dv                        web
hs                        web
il                        network_service
ip                        network_service
```

```
ja                          web
mk                          web
mq                          application_service
mt                          web
nu                          web
pp                          network_service
qq                          instant_messaging
rt                          web
sm                          network_service
sp                          network_service
ss                          web
st                          network_service
ts                          web
tu                          audio_video
tv                          web
...
unassigned_ip_prot_251      network_service
unassigned_ip_prot_252      network_service
the_simpsons_tapped_out     game
wallstreetjournal_china     web

vEdge# show app dpi supported-applications bi?

APPLICATION             FAMILY
---------------------------------------
biip                    Web
bild                    Web
bing                    Web
bits                    File Transfer
bithq                   Peer to Peer
bitme                   Peer to Peer
bigeye                  Web
bikhir                  Web
bigadda                 Web
bigtent                 Web
bitcoin                 Peer to Peer
bitlord                 Peer to Peer
bitmetv                 Peer to Peer
bitsoup                 Peer to Peer
bidorbuy                Web
bitenova                Peer to Peer
bitshock                Peer to Peer
bitworld                Peer to Peer
bigupload               Web
bitseduce               Peer to Peer
bitstrips               Game
biglobe_ne              Web
bittorrent              Peer to Peer
bitvaulttorrent         Peer to Peer
bitdefender_update      Web
bittorrent_application  Peer to Peer
vEdge#
```

Examples

Display full application information:

```
vEdge# show app dpi supported-applications | tab

      APP
APPLICATION  FAMILY              APPLICATION LONG NAME                  FAMILY LONG NAME
     ID
```

```
-----------------------------------------------------------------------------------------------------

ah            network_service      Authentication Header                    Network Service
      720
dr            web                  Dr.dk                                    Web
      2043
dv            web                  DV.is                                    Web
      1861
hs            web                  Hs.fi (Helsingin Sanomat)                Web
      2097
il            network_service      Internet Link (Transport protocol)       Network Service
      637
ip            network_service      Internet Protocol                        Network Service
      81
ja            web                  Ja.is                                    Web
      1897
mk            web                  Mk.co.kr                                 Web
      1213
mq            application_service  IBM Websphere MQ                         Application
Service  312
mt            web                  mt                                       Web
      1214
nu            web                  Nu.nl                                    Web
      2119
pp            network_service      ISO 8823 Presentation Protocol           Network Service
      938
qq           instant_messaging    QQ                                      Instant Messaging
    156
rt            web                  Rt.com                                   Web
      2064
sm            network_service      Sparse Mode                              Network Service
      678
sp            network_service      ISO 8327 Session Protocol                Network Service
      937
ss            web                  Ss.lv                                    Web
      1943
st            network_service      Stream protocol                          Network Service
      685
ts            web                  Ts                                       Web
      2427
tu            audio_video          Tu.tv                                    Audio/Video
      1060
tv            web                  Tv.com                                   Web
      1062
vg            web                  Vg.no                                    Web
      2076
wp            web                  Wp.pl                                    Web
      2078
xl            web                  Xl                                       Web
      2190
y8            web                  Y8.com                                   Web
      1758
yr            web                  Yr                                       Web
      2579
17u           web                  17u.com                                  Web
      1341
24h           web                  24h.com.vn                               Web
      1820
2ch           web                  2ch.net                                  Web
      1316
3pc           network_service      Third Party Connect                      Network Service
      606
abc           peer_to_peer         ABC Bittorrent client                    Peer to Peer
      1690
```

```
abv           web                  Abv.bg                                    Web
      1826
adc           peer_to_peer         Advanced Direct Connect                   Peer to Peer
      1438
adf           web                  AdF.ly                                    Web
      2824
adp           web                  Automatic Data Processing (ADP)           Web
      3275
afl           web                  AFL                                       Web
      2538
afp           file_server          Apple Filing Protocol                     File Server
      2645
aib           web                  Aib                                       Web
      2185
aim          instant_messaging    AOL Instant Messenger (formerly OSCAR)   Instant Messaging
    8
--More--

vEdge# show app dpi supported-applications m* | tab


APPLICATION  FAMILY               APPLICATION LONG NAME                          FAMILY LONG
 NAME     ID
-------------------------------------------------------------------------------------------------

mk           web                  Mk.co.kr                                  Web
          1213
mq           application_service  IBM Websphere MQ                          Application
 Service  312
mt           web                  mt                                        Web
          1214
mbc          web                  MBC (Munhwa Broadcasting Corp)            Web
          1231
mbl          web                  Mbl.is                                    Web
          2110
mbn          web                  MBN.co.kr                                 Web
          1212
mcs          network_service      Multipoint Communication Service          Network
Service      112
mms          audio_video          Microsoft Multimedia Streaming            Audio/Video
          115
mog          audio_video          MOG.com                                   Audio/Video
          447
mop          web                  Mop.com                                   Web
          1276
msn          instant_messaging    MSN Messenger                             Instant
Messaging    120
mtn          web                  MTN Group                                 Web
          3023
mtp          network_service      Multicast Transport Protocol              Network
Service      656
mtv          web                  MTV                                       Web
          1021
mux          network_service      Multiplexing                              Network
Service      657
m2pa         network_service      MTP2 User Peer-to-Peer Adaptation Layer   Network
Service      1304
m2ua         network_service      MTP2 User Adaptation Layer                Network
Service      1302
m3ua         network_service      MTP3 User Adaptation Layer                Network
Service      1301
mako         web                  Mako.co.il                                Web
          2107
```

```
mana          web                 Mana.pf                                    Web
          1919
manx          web                 Manx Telecom                               Web
          2874
mapi          mail                MS Exchange Message API                    Mail
          110
mapy          web                 Mapy                                       Web
          2367
mebc          web                 Middle East Broadcasting Center (MBC Group)  Web
          2902
mega          web                 MEGA                                       Web
          1299
mgcp          audio_video         Media Gateway Control Protocol             Audio/Video
          113
mgid          web                 MGID                                       Web
          3203
micp          network_service     Mobile Internetworking Control Protocol    Network
Service       724
mimp          webmail             IMP mobile version                         Webmail
          326
miro          peer_to_peer        Miro (getmiro.com)                         Peer to Peer
         1548
mixi          web                 Mixi.jp                                    Web
          444
mmse          wap                 MultiMedia Messages Encapsulation          Wap
          116
moat          web                 Moat                                       Web
          2704
moov          web                 Moov.mg                                    Web
          1922
mpls          routing             Multiprotocol Packet Label Switching       Routing
          119
mqtt          middleware          MQ Telemetry Transport                     Middleware
          2900
msrp          audio_video         Message Session Relay Protocol             Audio/Video
          919
mubi          audio_video         Mubi                                       Audio/Video
          2412
mute          peer_to_peer        Mute                                       Peer to Peer
         124
--More--
```

Related Topics

app-visibility
clear app dpi all, on page 14
clear app dpi apps, on page 15
clear app dpi flows, on page 16
show app dpi applications, on page 168
show app cflowd flows, on page 164
show app dpi flows, on page 169

show app log flow-count

show app log flow-count—Display the count of packet flows that are being logged (on vEdge routers only). Packet flows include a flow that matches an access list (ACL), a cflowd flow, or a DPI flow.

Command Syntax

show app log flow-count[**vpn** *vpn-id*]

Syntax Description

None	Display the count of all packet flows that are being logged.
vpn*vpn-id*	Specific VPN Display the count of packet flows in the specified VPN.

Command History

Release	Modification
16.3..	Command introduced.

Examples

Show app log flow-count

```
vEdge# show app log flow-count

VPN   COUNT
------------
1     20
```

Related Topics

clear app log flow-all, on page 17
clear app log flows, on page 18
log-frequency
show app log flows, on page 178
show system statistics, on page 454

show app log flows

show app log flows—Display logging information for packet flows (on vEdge routers only). Packet flows include flows that match an access list (ACL), a cflowd flow, and a DPI flow. Packet flows are logged when you configure a **log** action in a localized data policy (ACL), data policy for cflowd traffic monitoring, or an application-aware routing policy

Command Syntax

show app log flows [**vpn** *vpn-id*] [*flow-parameter*]

vManage Screen

Monitor ► Network ► ACL Logs

Syntax Description

None	Display all flow logging information.
flow-parameter	Flow Parameter Display flow logging information for a specific parameter. *flow-parameter* can be one of **egress-intf-name**, **icmp-opcode**, **ingress-intf-name**, **nhop-ip**, **policy-action**, **policy-direction**, **policy-name**, **start-time**, **tcp-cntrl-bits**, **time-to-expire**, **total-bytes**, and **total-pkts**. These parameters correspond to the column headings in the output of the **show app log flows** command.
vpn*vpn-id*	Specific VPN Display the flow logging information in the specified VPN.

Command History

Release	Modification
16.3.	Command introduced.

Examples

show app log flows

```
vEdge# show app log flows

                                                                  TCP
                                          TIME    EGRESS  INGRESS
                                  SRC     DEST          IP      CNTRL  ICMP                 TOTAL
TOTAL                                     TO      INTF    INTF                       POLICY  POLICY
VPN  SRC IP       DEST IP       PORT      PORT    DSCP  PROTO  BITS   OPCODE  NHOP IP      PKTS
BYTES     START TIME                      EXPIRE  NAME    NAME      POLICY NAME       ACTION
DIRECTION
-------------------------------------------------------------------------------------------------------------------------------
0    10.0.5.19   10.1.15.15  23556  34576  0     6      16     0       10.1.15.15  8531
1200071   Tue Aug  2 10:32:52 2016  59      cpu     ge0/0    123NenokaKantri  accept
inbound-acl
0    10.0.12.20  10.1.15.15  23556  39482  0     6      24     0       10.1.15.15  8459
1195449   Tue Aug  2 10:32:52 2016  59      cpu     ge0/0    123NenokaKantri  accept
inbound-acl
0    10.0.12.26  10.1.15.15  0      0      0     1      0      0       10.1.15.15  1127
110446    Tue Aug  2 10:00:43 2016  54      cpu     ge0/0    123NenokaKantri  accept
inbound-acl
0    10.0.101.1  10.1.15.15  12346  12346  48    17     0      0       10.1.15.15  8983
2246402   Tue Aug  2 10:48:41 2016  59      cpu     ge0/0    123NenokaKantri  accept
inbound-acl
0    10.0.101.2  10.1.15.15  12346  12346  48    17     0      0       10.1.15.15  8983
2246402   Tue Aug  2 10:48:41 2016  59      cpu     ge0/0    123NenokaKantri  accept
inbound-acl
0    10.0.101.3  10.1.15.15  12346  12346  48    17     0      0       10.1.15.15  8983
2246402   Tue Aug  2 10:48:41 2016  59      cpu     ge0/0    123NenokaKantri  accept
inbound-acl
0    10.0.101.4  10.1.15.15  12346  12346  48    17     0      0       10.1.15.15  8983
2246402   Tue Aug  2 10:48:41 2016  59      cpu     ge0/0    123NenokaKantri  accept
inbound-acl
```

```
0    10.0.111.1  10.1.15.15  12366  12346  48    17     0      0       10.1.15.15  21157
11852774  Tue Aug  2 10:00:38 2016  59      cpu     ge0/0    123NenokaKantri  accept
inbound-acl
0    10.0.111.2  10.1.15.15  12366  12346  48    17     0      0       10.1.15.15  21305
12021134  Tue Aug  2 10:00:38 2016  59      cpu     ge0/0    123NenokaKantri  accept
inbound-acl
0    10.1.14.14  10.1.15.15  12346  12346  48    17     0      0       10.1.15.15  15566
3879908   Tue Aug  2 10:00:39 2016  59      cpu     ge0/0    123NenokaKantri  accept
inbound-acl
0    10.1.15.15  10.0.5.19   34576  23556  48    6      24     0       0.0.0.0     8450
1170516   Tue Aug  2 10:32:52 2016  59      cpu     cpu      123NenokaKantri  accept
outbound-acl
0    10.1.15.15  10.0.12.20  39482  23556  48    6      24     0       0.0.0.0     8324
1162324   Tue Aug  2 10:32:52 2016  59      cpu     cpu      123NenokaKantri  accept
outbound-acl
0    10.1.15.15  10.0.12.26  0      0      0     1      0      2048    0.0.0.0     1127
110446    Tue Aug  2 10:00:43 2016  54      cpu     cpu      123NenokaKantri  accept
outbound-acl
0    10.1.15.15  10.0.101.1  12346  12346  48    17     0      0       0.0.0.0     8984
2120800   Tue Aug  2 10:48:41 2016  59      cpu     cpu      123NenokaKantri  accept
outbound-acl
0    10.1.15.15  10.0.101.2  12346  12346  48    17     0      0       0.0.0.0     8984
2120800   Tue Aug  2 10:48:41 2016  59      cpu     cpu      123NenokaKantri  accept
outbound-acl
0    10.1.15.15  10.0.101.3  12346  12346  48    17     0      0       0.0.0.0     8984
2120800   Tue Aug  2 10:48:41 2016  59      cpu     cpu      123NenokaKantri  accept
outbound-acl
0    10.1.15.15  10.0.101.4  12346  12346  48    17     0      0       0.0.0.0     8984
2120800   Tue Aug  2 10:48:41 2016  59      cpu     cpu      123NenokaKantri  accept
outbound-acl
0    10.1.15.15  10.0.111.1  12346  12366  48    17     0      0       0.0.0.0     14780
3055280   Tue Aug  2 10:34:08 2016  59      cpu     cpu      123NenokaKantri  accept
outbound-acl
0    10.1.15.15  10.0.111.2  12346  12366  48    17     0      0       0.0.0.0     15025
3107792   Tue Aug  2 10:34:08 2016  59      cpu     cpu      123NenokaKantri  accept
outbound-acl
0    10.1.15.15  10.1.14.14  12346  12346  48    17     0      0       0.0.0.0     15566
3674704   Tue Aug  2 10:00:39 2016  59      cpu     cpu      123NenokaKantri  accept
outbound-acl
0    10.1.15.15  10.1.16.16  12346  12346  48    17     0      0       0.0.0.0     10966
2588240   Tue Aug  2 10:34:08 2016  59      cpu     cpu      123NenokaKantri  accept
outbound-acl
0    10.1.16.16  10.1.15.15  12346  12346  48    17     0      0       10.1.15.15  15547
3876810   Tue Aug  2 10:00:39 2016  59      cpu     ge0/0    123NenokaKantri  accept
inbound-acl
```

Related Topics

action
clear app log flow-all, on page 17
clear app log flows, on page 18
log-frequency
policy
show app log flow-count, on page 177
show system statistics, on page 454

show app tcp-opt

show app tcp-opt—Display information about TCP-optimized flows (on vEdge routers only).

Command Syntax

show app tcp-opt (**active-flows** | **expired-flows**)

show app tcp-opt summary

Syntax Description

active-flows	Active Flows Display information about active TCP-optimized flows.
expired-flows	Expired Flows Display information about expired TCP-optimized flows.
summary	Flow Summary Display a summary of the TCP-optimized flows.

Command History

Release	Modification
17.2.	Command introduced.

Examples

Display information about active and expired TCP-optimized flows:

Show app tcp-opt

```
vEdge# show app tcp-opt active-flows


app tcp-opt active-flows vpn 1 src-ip 10.20.24.17 dest-ip 10.20.25.18 src-port 53723 dest-port
 22
 start-time        "Fri Mar 17 13:21:02 2017"
 egress-intf-name  loop0.3
 ingress-intf-name ge0_4
 tx-bytes          153
 rx-bytes          64
 tcp-state         "In progress"
 proxy-identity    Client-Proxy

vEdge# show app tcp-opt expired-flows
app tcp-opt expired-flows 1489781786360 vpn 1 src-ip 10.20.24.17 dest-ip 10.20.25.18 src-port
 53722 dest-port 22
 start-time     "Fri Mar 17 13:16:26 2017"
 end-time       "Fri Mar 17 13:17:51 2017"
 tx-bytes       4113
 rx-bytes       4333
 tcp-state      Optimized
 proxy-identity Client-Proxy
 del-reason     Closed
```

Related Topics

data-policy

tcp-optimization

show app-route sla-class

show app-route sla-class—Display information about the SLA classes operating on the vEdge router (on vEdge routers only).

Note that when the thresholds cross for one of these SLA classes, a notification and a syslog are triggered.

Command Syntax

show app-route sla-class

show app-route sla-class (**latency** [*milliseconds*] | **loss** [*percentage*] | **name** [*string*])

Syntax Description

None	Display information for all SLA classes configured and operating on the vEdge router
latency[*milliseconds*]	Packet Latency Display information for all packet latency values or for the specified latency value operating on the vEdge router.
loss[*percentage*]	Packet Loss Display information for all packet loss values or for the specified loss value operating on the vEdge router.
name[*string*]	SLA Class Name Display information for all SLA class names or for the specified class name operating on the vEdge router.

Command History

Release	Modification
15.2.	Command introduced.

Examples

The following output shows three SLA classes and the index numbers that identify these classes. The first line of the output shows the default SLA class (__all_tunnels_sc), and second and third lines show two configured SLA classes that are operating on the router (test_sla_class and test_sla_class1).

Show app-route sla-class

```
vEdge# show app-route sla-class

INDEX   NAME                  LOSS  LATENCY
-----------------------------------------------
0       __all_tunnels_sc      100   2147483647
```

```
1       test_sla_class         100   50
2       test_sla_class1        1     1
```

Related Topics

app-route-policy
bfd color
show app-route stats, on page 183
show bfd sessions, on page 187
show policy service-path, on page 413
show policy tunnel-path, on page 414

show app-route stats

show app-route stats—Display statistics about data traffic traffic jitter, loss, and latency and other interface characteristics for all operational data plane tunnels (on vEdge routers only). The command also displays the index of the SLA classes that are dampened and the dampening left for the SLA class. You can use the information from the command output to fashion application-aware routing policy.

Command Syntax

show app-route-statsshow app-route stats local-color *color* [**remote-system-ip** *ip-address*]

show app-route stats remote-color *color* [**remote-system-ip** *ip-address*]

show app-route stats remote-system-ip *ip-address*

Syntax Description

None	Display data traffic statistics for all data plane tunnel connections.
local-color*color*	Local TLOC Color Display data traffic statistics for the specified local TLOC color.
remote-system-ip*ip-address*	Remote System IP Address Display data traffic statistics for the specified remote system.
remote-color*color*	Remote TLOC Color Display data traffic statistics for the specified remote TLOC color.

Command History

Release	Modification
14.2.	Command introduced.
15.2.	**sla-class-index** option added.
15.3.	Syntax changed and simplified.

Release	Modification
20.5	The commands displays the index of the SLA classes that are dampened and the dampening left for the SLA class.

Examples

show app-route stats

```
vEdge# show app-route stats


app-route statistics 184.111.1.2 184.118.101.2 ipsec 12346 12346
 remote-system-ip 172.16.248.101
 local-color      mpls
 remote-color     mpls
 mean-loss        0
 mean-latency     5
 sla-class-index  0

       TOTAL          AVERAGE  AVERAGE  TX DATA  RX DATA
INDEX  PACKETS  LOSS  LATENCY  JITTER   PKTS     PKTS
-----------------------------------------------------------
0      592      0     4        8        0        0
1      592      0     4        8        0        0
2      592      0     6        11       0        0
3      592      0     4        8        0        0
4      593      0     5        9        0        0
5      590      0     4        8        0        0

app-route statistics 184.111.1.2 184.116.102.2 ipsec 12346 12346
 remote-system-ip 172.16.248.102
 local-color      mpls
 remote-color     mpls
 mean-loss        1
 mean-latency     4
 sla-class-index  0

       TOTAL          AVERAGE  AVERAGE  TX DATA  RX DATA
INDEX  PACKETS  LOSS  LATENCY  JITTER   PKTS     PKTS
-----------------------------------------------------------
0      591      64    4        7        0        0
1      594      0     5        8        0        0
2      590      0     5        10       0        0
3      592      0     4        8        0        0
4      593      0     4        8        0        0
5      589      0     4        8        0        0

app-route statistics 184.111.1.2 184.120.103.2 ipsec 12346 12346
 remote-system-ip 172.16.248.103
 local-color      mpls
 remote-color     mpls
 mean-loss        17
 mean-latency     5
 sla-class-index  0

       TOTAL          AVERAGE  AVERAGE  TX DATA  RX DATA
INDEX  PACKETS  LOSS  LATENCY  JITTER   PKTS     PKTS
-----------------------------------------------------------
0      590      140   4        7        0        0
1      594      0     5        9        0        0
```

```
2       592       0      6         11        0         0
3       591       0      4         8         0         0
4       593       0      5         10        0         0
5       590       475    5         9         0         0
...


vEdge# show app-route stats
app-route statistics 192.168.0.1 192.168.101.2 ipsec 12346 12386
 remote-system-ip 172.16.248.101
 local-color      public-internet
 remote-color     public-internet
 mean-loss
 mean-latency     15
 sla-class-index  0, 1
 Dampening-sla-class-index 2,3
 Dampening-multiplier-left 10,20

TOTAL           AVERAGE   AVERAGE   TX DATA   RX DATA
INDEX   PACKETS   LOSS   LATENCY   JITTER    PKTS      PKTS
------------------------------------------------------------
0       600       0      16         21         0         0
1       600       0      14         18         0         0
2       599       0      17         20         0         0
3       599       0      14         18         0         0
4       600       0      15         19         0         0
5       599       0      15         19         0         0
...
```

Related Topics

app-route-policy
bfd color
show app-route sla-class, on page 182
show bfd sessions, on page 187
show policy service-path, on page 413
show policy tunnel-path, on page 414

show arp

show arp—Display the IPv4 entries in the Address Resolution Protocol (ARP) table, which lists the mapping of IPv4 addresses to device MAC addresses.

To display IPv6 ARP table entries, use the **show ipv6 neighbor** command.

Command Syntax

show arp [**vpn** *vpn-id*]

Syntax Description

None	List all the IPv4 entries in the ARP table.
vpn*vpn-id*	VPN List the ARP table entries for the specified VPN.

Command History

Release	Modification
14.1.	Command introduced.

Examples

Show arp

```
Cisco vEdge# show arp
     IF
VPN  NAME   IP           MAC                STATE    IDLE TIMER  UPTIME
-------------------------------------------------------------------------
0    ge0/0  10.0.11.1    00:0c:29:86:ea:83  static   -           0:10:10:07
0    ge0/7  10.0.100.11  00:0c:29:86:ea:c9  static   -           0:10:10:07
512  eth0   10.0.1.1     00:50:56:c0:00:01  dynamic  0:00:19:04  0:00:05:04
512  eth0   10.0.1.11    00:50:56:00:01:01  static   -           0:10:10:03
512  eth0   10.0.1.254   00:50:56:ed:b5:5e  dynamic  0:00:17:04  0:00:09:04
```

Related Topics

arp
clear arp, on page 20
show ipv6 neighbor, on page 320

show bfd history

show bfd history—Display the history of the BFD sessions running on a vEdge router (on vEdge routers only). BFD sessions between vEdge routers start automatically, with requiring any configuring, as soon as at least two vEdge routers are running in the Cisco SD-WAN network. The sessions run over an IPsec tunnel between the two devices.

Command Syntax

show bfd history [**color** *color*] [**site-id** *site-id*] [**state** *state*] [**system-ip** *ip-address*]

Syntax Description

None	Show the history of all the BFD sessions running on the vEdge router.
state *state*	BFD State Display the history of BFD sessions in a particular state. *state* can be one of the following: **admin-down**, **down**, **init**, **invalid**, and **up**.
color *color*	Color Display the history of BFD sessions for a specific traffic flow.
site-id *site-id*	Site ID Display the history of BFD sessions to a specific Cisco SD-WAN network site.

system-ip *ip-address*	System IP Display the history of BFD sessions to a specific device in the Cisco SD-WAN network.

Command History

Release	Modification
14.1.	Command introduced.
Cisco SD-WAN Release 20.3.1	New status added to STATE column: **inactive** indicates that an on-demand tunnel is in Inactive mode on a device with on-demand tunnels enabled.

Examples

show bfd history

```
RX       TX
SYSTEM IP         SITE ID  COLOR            STATE       IP               PORT         ENCAP
 TIME                      PKTS     PKTS     DEL
------------------------------------------------------------------------------------------
10.0.104.1        300      lte               up          192.168.10.100   12366        ipsec
 2020-07-21T16:44:54+0000 0        0        0
10.0.104.1        300      lte               down        192.168.10.100   12366        ipsec
 2020-07-21T16:46:46+0000 0        0        0
10.0.104.1        300      lte               down        192.168.10.100   12366        ipsec
 2020-07-21T16:46:46+0000 0        0        1
10.0.104.1        300      lte               inactive    192.168.10.100   12366        ipsec
 2020-07-21T16:46:46+0000 0        0        0
10.0.104.1        300      lte               down        192.168.10.100   12366        ipsec
 2020-07-21T18:39:02+0000 0        0        0
10.0.104.1        300      lte               up          192.168.10.100   12366        ipsec
 2020-07-21T18:39:04+0000 0        0        0
10.0.104.1        300      lte               down        192.168.10.100   12366        ipsec
 2020-07-21T18:40:52+0000 0        0        0
10.0.104.1        300      lte               down        192.168.10.100   12366        ipsec
 2020-07-21T18:40:52+0000 0        0        1
10.0.104.1        300      lte               inactive    192.168.10.100   12366        ipsec
 2020-07-21T18:40:52+0000 0        0        0
```

Related Topics

bfd color
show bfd sessions, on page 187
show bfd summary, on page 190
show bfd tloc-summary-list, on page 191

show bfd sessions

show bfd sessions—Display information about the BFD sessions running on the local vEdge router (on vEdge routers only). BFD sessions between vEdge routers start automatically, without requiring any configuring, as soon as at least two vEdge routers are running in the Cisco SD-WAN network. The BFD sessions run over an IPsec connection between the two devices.

Command Syntax

show bfd sessions [**color** *color*] [**site-id** *site-id*] [**state** *state*] [**system-ip** *ip-address*]

Syntax Description

None	Show the history of all the BFD sessions running on the vEdge router.
state *state*	BFD State Display the history of BFD sessions in a particular state. *state* can be one of the following: **admin-down**, **down**, **init**, **invalid**, and **up**.
color *color*	Color Display the history of BFD sessions for a specific traffic flow.
site-id *id*	Site ID Display the history of BFD sessions to a specific Cisco SD-WAN network site.
system-ip *ip-address*	System IP Display the history of BFD sessions to a specific device in the Cisco SD-WAN network.

Command History

Release	Modification
14.1.	Command introduced.
16.3.	Added support to display IPv6 end points.

Examples

Display BFD session information for network end points:

Show bfd sessions

```
vEdge# show bfd sessions
                                        SOURCE TLOC      REMOTE TLOC
DST PUBLIC       DST PUBLIC          DETECT      TX
SYSTEM IP        SITE ID  STATE       COLOR            COLOR             SOURCE IP
IP               PORT        ENCAP  MULTIPLIER  INTERVAL(msec)  UPTIME         TRANSITIONS
-----------------------------------------------------------------------------------------------
172.16.241.1     30001001 up          mpls             mpls              184.116.102.2
174.11.1.2       12346       ipsec  20          1000           0:01:46:50      0

172.16.241.1     30001001 up          private1         mpls              186.116.102.2
174.11.1.2       12346       ipsec  20          1000           0:01:46:51      0

172.16.241.2     30001002 up          mpls             mpls              184.116.102.2
174.11.2.2       12346       ipsec  20          1000           0:01:41:27      2

172.16.241.2     30001002 up          private1         mpls              186.116.102.2
174.11.2.2       12346       ipsec  20          1000           0:01:41:28      2
```

```
172.16.241.3     30001003 up          mpls            mpls            184.116.102.2
174.11.3.2       12346       ipsec  20          1000          0:01:40:30      2

172.16.241.3     30001003 up          private1        mpls            186.116.102.2
174.11.3.2       12346       ipsec  20          1000          0:01:40:31      0

172.16.241.4     30001004 up          mpls            mpls            184.116.102.2
174.11.4.2       12346       ipsec  20          1000          0:01:33:46      2

172.16.241.4     30001004 up          private1        mpls            186.116.102.2
174.11.4.2       12346       ipsec  20          1000          0:01:33:46      2

172.16.241.5     30001005 up          mpls            mpls            184.116.102.2
174.11.5.2       12346       ipsec  20          1000          0:01:52:44      0

172.16.241.5     30001005 up          private1        mpls            186.116.102.2
174.11.5.2       12346       ipsec  20          1000          0:01:52:45      0

172.16.241.6     30001006 up          mpls            mpls            184.116.102.2
174.11.6.2       12346       ipsec  20          1000          0:17:04:30      6

172.16.241.6     30001006 up          private1        mpls            186.116.102.2
174.11.6.2       12346       ipsec  20          1000          0:17:04:31      5

172.16.241.7     30001007 up          mpls            mpls            184.116.102.2
174.11.7.2       12346       ipsec  20          1000          0:01:41:27      13

172.16.241.7     30001007 up          private1        mpls            186.116.102.2
174.11.7.2       12346       ipsec  20          1000          0:01:41:27      13

172.16.241.8     30001008 up          mpls            mpls            184.116.102.2
174.11.8.2       12346       ipsec  20          1000          0:01:41:27      11

172.16.241.8     30001008 up          private1        mpls            186.116.102.2
174.11.8.2       12346       ipsec  20          1000          0:01:41:28      11

172.16.241.9     30001009 up          mpls            mpls            184.116.102.2
174.11.9.2       12346       ipsec  20          1000          0:01:47:08      5

172.16.241.9     30001009 up          private1        mpls            186.116.102.2
174.11.9.2       12346       ipsec  20          1000          0:01:47:09      5

172.16.241.10    300010010up          mpls            mpls            184.116.102.2
174.11.10.2      12346       ipsec  20          1000          0:16:54:13      1

172.16.241.10    300010010up          private1        mpls            186.116.102.2
174.11.10.2      12346       ipsec  20          1000          0:16:54:14      1

172.16.241.11    300010011up          mpls            mpls            184.116.102.2
174.11.11.2      12346       ipsec  20          1000          0:01:52:39      0
```

Related Topics

bfd color

show bfd history, on page 186
show bfd summary, on page 190
show bfd tloc-summary-list, on page 191

show bfd summary

show bfd summary—Display summary information about the BFD sessions running on the local vEdge router (on vEdge routers only). BFD sessions between vEdge routers start automatically, with requiring any configuring, as soon as at least two vEdge routers are running in the Cisco SD-WAN network. The sessions run over an IPsec connection between the two devices.

Command Syntax

show bfd summary [**bfd-sessions-flap** | **bfd-sessions-max** | **bfd-sessions-total** | **bfd-sessions-up**]

Syntax Description

None	Display all summary information about BFD sessions running on the vEdge router.
<string>bfd-sessions-up	BFD Sessions That Are Up Display the current number of BFD sessions that are in the Up state.</string>
bfd-sessions-flap	BFD Transitions Display the number of BFD sessions that have transitioned from the Up state.
bfd-sessions-max	Maximum Number of BFD Sessions Display the total number of BFD sessions that have been created since the vEdge router booted up.
bfd-sessions-total	Total Number of BFD Sessions Display the current number of BFD sessions running on the vEdge router.

Command History

Release	Modification
15.2.	Command introduced.
17.1.	Display configured BFD app-route poll interval in command output.

Examples

Show bfd summary

```
vEdge# show bfd summary
sessions-total         4
sessions-up            4
sessions-max           4
sessions-flap          4
poll-interval          600000
```

Related Topics

bfd app-route
bfd color
show bfd history, on page 186
show bfd sessions, on page 187
show bfd tloc-summary-list, on page 191

show bfd tloc-summary-list

show bfd tloc-summary-list—Display BFD session summary information per TLOC (on vEdge routers only).

Command Syntax

show bfd tloc-summary-list

show bfd tloc-summary-list *interface-name* [**gre** | **ipsec** | **ipsec-ike**] [**sessions-flap** |**sessions-total** |**sessions-up**]

Syntax Description

None	Display all summary information about BFD sessions running on the vEdge router.
sessions-up	BFD Sessions That Are Up Display the current number of BFD sessions that are in the Up state.
sessions-flap	BFD Transitions Display the number of BFD sessions that have transitioned from the Up state.
[**gre** | **ipsec** | **ipsec-ike**]	Encapsulation Type Display information about BFD session with a specific encapsulation type.
interface-name	Specific Interface Display information about BFD sessions on the specified interface.
sessions-total	Total Number of BFD Sessions Display the current number of BFD sessions running on the vEdge router.

Command History

Release	Modification
16.2.3.	Command introduced.
17.2.	Added **ipsec-ike** option.

Examples

Show bfd tloc-summary-list

```
vEdge1# show bfd tloc-summary-list

                   SESSIONS  SESSIONS  SESSIONS
IFNAME     ENCAP   TOTAL     UP        FLAP
-----------------------------------------------
ge0_0      ipsec   10        9         9
ge0_3      ipsec   10        9         9

vEdge2# show bfd tloc-summary-list ge0/4 ipsec
bfd tloc-summary-list ge0/4 ipsec
Interface name         ge0/4
Encapsulation          ipsec
sessions-total         0
sessions-up            0
sessions-flap          0
```

Related Topics

bfd color
show bfd history, on page 186
show bfd sessions, on page 187
show bfd summary, on page 190

show bgp neighbor

show bgp neighbor—List the router's BGP neighbors (on vEdge routers only).

Command Syntax

show bgp neighbor [**vpn** *vpn-id*] [**detail**]

show bgp neighbor address-family [*address-family-property*] [**detail**]

Syntax Description

None	List all BGP neighbors.
address-family[*address-family-property*]	BGP Address Family Properties List information about a specific BGP address family property. *address-family-property* can be one of the following: **accepted-prefix-count**, **afi**, **as-path-unchanged**, **def-originate-routemap**, **inbound-soft-reconfig**, **max-prefix-restart-interval**, **max-prefix-threshold-warning**, **max-prefix-warning-only**, **maximum-prefix-count**, **med-unchanged**, **nexthop-self**, **nexthop-unchanged**, **policy-in**, **policy-out**, **private-as**, **route-reflector-client**, **sent-community**, and **sent-def-originate**.

detail	Detailed Information Show detailed information.
vpn*vpn-id*	VPN List the entries in the ARP table for the specified VPN.

Command History

Release	Modification
14.1.	Command introduced.

Examples

Show bgp neighbor

```
vEdge# show bgp neighbor

                      MSG   MSG   OUT
AFI
VPN  PEER ADDR    AS  RCVD  SENT  Q    UPTIME      STATE        LAST UPTIME
ID   AFI
-------------------------------------------------------------------------------------------------------
1    10.20.25.18  2   3796  3799  0    0:01:03:17  established  Thu Mar  3 09:33:24 2016
0    ipv4-unicast

vEdge# show bgp neighbor detail
bgp bgp-neighbor vpn 1 10.20.25.18
 as                  2
 local-as-num        1
 remote-router-id    172.16.255.18
 last-read           1
 keepalive           1
 holdtime            3
 cfg-keepalive       0
 cfg-holdtime        0
 adv-4byte-as-cap    true
 rec-4byte-as-cap    true
 adv-refresh-cap     true
 rec-refresh-cap     true
 rec-new-refresh-cap true
 msg-rcvd            3853
 msg-sent            3856
 prefix-rcvd         1
 prefix-valid        1
 prefix-installed    1
 outQ                0
 uptime              0:01:04:14
 state               established
 open-in-count       0
 open-out-count      1
 notify-in-count     0
 notify-out-count    0
 update-in-count     2
 update-out-count    2
 keepalive-in-count  3851
 keepalive-out-count 3852
```

```
refresh-in-count    0
refresh-out-count   1
dynamic-in-count    0
dynamic-out-count   0
adv-interval        1
conn-established    1
conn-dropped        0
local-host          10.20.25.16
local-port          179
remote-host         10.20.25.18
remote-port         58647
next-hop            10.20.25.16
read-thread-on      true
password            d5a2***d0
last-uptime         "Thu Mar  3 09:33:24 2016"
```

Related Topics

show bgp routes, on page 194
show bgp summary, on page 197

show bgp routes

show bgp routes—List the router's BGP neighbors (on vEdge routers only).

Command Syntax

show bgp routes [*prefix*/*length*] [**vpn** *vpn-id*] [**detail**]

Syntax Description

None	List all BGP neighbors.
detail	Detailed Information Show detailed information.
prefix/*length prefix* **vpn** *vpn-id*	Route Prefix Show the BGP route information for the specified route prefix. If you omit the prefix length, you must specify a VPN identifier so that the Cisco SD-WAN software can find the route that best matches the prefix.
vpn *vpn-id*	VPN List the BGP routes for the specified VPN.

Command History

Release	Modification
14.1.	Command introduced.

Examples

Show bgp routes

```
vEdge# show bgp routes vpn 1

                        INFO                        LOCAL                       AS

VPN  PREFIX             ID    NEXTHOP      METRIC  PREF   WEIGHT  ORIGIN      PATH   PATH
STATUS          TAG
-------------------------------------------------------------------------------------------------------------
1    10.2.2.0/24        0     0.0.0.0      1000    50     0       incomplete  Local
valid,best           0
1    10.2.3.0/24        0     0.0.0.0      1000    50     0       incomplete  Local
valid,best           0
1    10.20.24.0/24      0     0.0.0.0      1000    50     0       incomplete  Local
valid,best           0
1    56.0.1.0/24        0     0.0.0.0      1000    50     0       incomplete  Local
valid,best           0
1    172.16.255.112/32  0     0.0.0.0      1000    50     0       incomplete  Local
valid,best           0
1    172.16.255.117/32  0     0.0.0.0      1000    50     0       incomplete  Local
valid,best           0
1    172.16.255.118/32  0     10.20.25.18  0       -      0       incomplete  2
valid,best,external  0

vEdge# show bgp routes vpn 1 detail
bgp routes-table vpn 1 10.2.2.0/24
 best-path 1
 advertised-peers 0
  peer-addr 10.20.25.18
 info 0
  nexthop       0.0.0.0
  metric        1000
  local-pref    50
  weight        0
  origin        incomplete
  as-path       Local
  ri-peer       0.0.0.0
  ri-routerid   172.16.255.16
  local         true
  sourced       true
  ext-community SoO:0:600
  path-status   valid,best
  tag           0
bgp routes-table vpn 1 10.2.3.0/24
 best-path 1
 advertised-peers 0
  peer-addr 10.20.25.18
 info 0
  nexthop       0.0.0.0
  metric        1000
  local-pref    50
  weight        0
  origin        incomplete
  as-path       Local
  ri-peer       0.0.0.0
  ri-routerid   172.16.255.16
  local         true
  sourced       true
  ext-community SoO:0:600
  path-status   valid,best
  tag           0
```

```
bgp routes-table vpn 1 10.20.24.0/24
 best-path 1
 advertised-peers 0
  peer-addr 10.20.25.18
 info 0
  nexthop       0.0.0.0
  metric        1000
  local-pref    50
  weight        0
  origin        incomplete
  as-path       Local
  ri-peer       0.0.0.0
  ri-routerid   172.16.255.16
  local         true
  sourced       true
  ext-community SoO:0:600
  path-status   valid,best
  tag           0
bgp routes-table vpn 1 56.0.1.0/24
 best-path 1
 advertised-peers 0
  peer-addr 10.20.25.18
 info 0
  nexthop       0.0.0.0
  metric        1000
  local-pref    50
  weight        0
  origin        incomplete
  as-path       Local
  ri-peer       0.0.0.0
  ri-routerid   172.16.255.16
  local         true
  sourced       true
  ext-community SoO:0:600
  path-status   valid,best
  tag           0
bgp routes-table vpn 1 172.16.255.112/32
 best-path 1
 advertised-peers 0
  peer-addr 10.20.25.18
 info 0
  nexthop       0.0.0.0
  metric        1000
  local-pref    50
  weight        0
  origin        incomplete
  as-path       Local
  ri-peer       0.0.0.0
  ri-routerid   172.16.255.16
  local         true
  sourced       true
  ext-community SoO:0:600
  path-status   valid,best
  tag           0
bgp routes-table vpn 1 172.16.255.117/32
 best-path 1
 advertised-peers 0
  peer-addr 10.20.25.18
 info 0
  nexthop       0.0.0.0
  metric        1000
  local-pref    50
  weight        0
  origin        incomplete
```

```
  as-path       Local
  ri-peer       0.0.0.0
  ri-routerid   172.16.255.16
  local         true
  sourced       true
  ext-community SoO:0:600
  path-status   valid,best
  tag           0
bgp routes-table vpn 1 172.16.255.118/32
 best-path 1
 info 0
  nexthop     10.20.25.18
  metric      0
  weight      0
  origin      incomplete
  as-path     2
  ri-peer     10.20.25.18
  ri-routerid 172.16.255.18
  path-status valid,best,external
  tag         0
```

Related Topics

show bgp neighbor, on page 192
show bgp summary, on page 197

show bgp summary

show bgp summary—Display the status of all BGP connections (on vEdge routers only).

Command Syntax

show bgp summary [**vpn** *vpn-id*]

Syntax Description

None	List status information about all BGP connections.
vpn*vpn-id*	VPN List status information about BGP connections in the specified VPN.

Command History

Release	Modification
14.1.	Command introduced.

Examples

Show bgp summary

```
vEdge# show bgp summaryvpn                    1
bgp-router-identifier  172.16.255.16
```

```
local-as               1
rib-entries            13
rib-memory             1456
total-peers            1
peer-memory            4816
Local-soo              SoO:0:600
ignore-soo
                       MSG        MSG        OUT                      PREFIX   PREFIX   PREFIX

NEIGHBOR         AS    RCVD       SENT       Q      UPTIME           RCVD     VALID    INSTALLED
  STATE
-------------------------------------------------------------------------------------------------
10.20.25.18      2     3640       3643       0      0:01:00:41       1        1        1
    established
```

Related Topics

show bgp neighbor, on page 192
show bgp routes, on page 194

show boot-partition

show boot-partition—Display the active boot partition and the software version installed in the boot partitions.

Starting in Release 15.4, this command is replaced with the show software command.

Command Syntax

show boot-partition [*partition-number*]

Syntax Description

None	Display information about the boot partitions on the device, including which partition is active and what software version is installed on each partition.
partition-number	Specific Partition Display information for the specific boot partition. *partition-number* can be 1 or 2.

Command History

Release	Modification
14.1.	Command introduced.
15.3.	Command available in this release and earlier.
15.4.	Replaced with **show software command**.

Examples

Show boot-partition

```
vEdge# show boot-partition
PARTITION  ACTIVE  VERSION  TIMESTAMP
------------------------------------------------------------
1          X       14.2.4   2014-11-11T18:16:49+00:00
2          -       14.2.3   2014-11-11T18:35:14+00:00
```

Related Topics

reboot, on page 94
request software activate, on page 142
request software install, on page 143

show bridge interface

show bridge interface—List information about the interfaces on which bridging is configured (on vEdge routers only).

Command Syntax

show bridge interface

show bridge interface *bridge-id* [*interface-name* [(**admin-status** | **encap-type** | **ifindex** | **mtu** | **oper-status** | **rx-octets** | **rx-pkts** | **tx-octets** | **tx-pkts** | **vlan**)]

Syntax Description

None	List information about all interfaces on which bridging ia configured.
bridge-id	Specific Bridging Domain List information about the interface associated with a specific bridging domain.
interface-name(**admin-status** | **encap-type**|**ifindex** | **mtu** | **oper-status** | **rx-octets** |**rx-pkts** |**tx-octets** |**tx-pkts** | **vlan**)	Specific Bridging Domain Property List information about a specific interface or about a property associated with a specific interface. The options correspond to the column headings in the **show bridge interface** command output.

Command History

Release	Modification
15.3.	Command introduced.

Examples

Show bridge interface

```
vEdge# show bridge interface
```

BRIDGE	INTERFACE	VLAN	ADMIN STATUS	OPER STATUS	ENCAP TYPE	IFINDEX	MTU	RX PKTS	RX OCTETS	TX PKTS	TX OCTETS
1	ge0/2	1	Up	Up	vlan	34	1500	0	0	2	168
1	ge0/5	1	Up	Up	vlan	36	1500	0	0	2	168
1	ge0/6	1	Up	Up	vlan	38	1500	0	0	2	168
2	ge0/2	2	Up	Up	vlan	40	1500	0	0	3	242
2	ge0/5	2	Up	Up	vlan	42	1500	0	0	3	242
2	ge0/6	2	Up	Up	vlan	44	1500	0	0	3	242
50	ge0/2	-	Up	Up	null	16	1500	0	0	2	140
50	ge0/5	-	Up	Up	null	19	1500	0	0	2	140
50	ge0/6	-	Up	Up	null	20	1500	0	0	2	140

Related Topics

bridge
clear bridge mac, on page 23
clear bridge statistics, on page 24
show bridge mac, on page 200
show bridge table, on page 201

show bridge mac

show bridge mac—List the MAC addresses that this vEdge router has learned (on vEdge routers only).

Command Syntax

show bridge mac

Syntax Description

None

Command History

Release	Modification
15.3.	Command introduced.

Examples

Show bridge mac

```
vEdge# show bridge mac

                                                    RX    RX      TX    TX
BRIDGE  INTERFACE  MAC ADDR           STATE        PKTS  OCTETS  PKTS  OCTETS
-------------------------------------------------------------------------------
1       ge0/5      aa:01:05:05:00:01  dynamic      2     248     0     0
1       ge0/5      aa:01:05:05:00:02  dynamic      2     248     0     0
1       ge0/5      aa:01:05:05:00:03  dynamic      2     248     0     0
1       ge0/5      aa:01:05:05:00:04  dynamic      2     248     0     0
1       ge0/5      aa:01:05:05:00:05  dynamic      2     248     0     0
2       ge0/5      aa:02:05:05:00:01  dynamic      2     248     0     0
2       ge0/5      aa:02:05:05:00:02  dynamic      2     248     0     0
2       ge0/5      aa:02:05:05:00:03  dynamic      2     248     0     0
2       ge0/5      aa:02:05:05:00:04  dynamic      1     124     0     0
2       ge0/5      aa:02:05:05:00:05  dynamic      1     124     0     0
```

Related Topics

bridge
clear bridge mac, on page 23
clear bridge statistics, on page 24
show bridge interface, on page 199
show bridge table, on page 201

show bridge table

show bridge table—List the information in the bridge forwarding table (on vEdge routers only).

Command Syntax

show bridge table

Syntax Description

None

Command History

Release	Modification
15.3.	Command introduced.

Examples

Show bridge table

```
vEdge# show bridge table

                    ROUTING              NUM                  RX     RX       TX     TX
```

```
FLOOD   FLOOD
BRIDGE   NAME   VLAN   INTERFACE   MAX-MACS   MACS   AGE-TIME(sec)   PKTS   OCTETS   PKTS   OCTETS
PKTS    OCTETS   LEARN   AGE   MOVE
------------------------------------------------------------------------------------------------------
1              1      irb1        1024       0      300             2      168      0      0
2       168     0       0     0
2              2      irb2        1024       0      300             3      242      0      0
3       242     0       0     0
50             -      irb50       1024       0      300             2      140      0      0
2       140     0       0     0
```

Related Topics

bridge
clear bridge mac, on page 23
clear bridge statistics, on page 24
show bridge interface, on page 199
show bridge mac, on page 200

show cellular modem

show cellular modem—Display cellular modem information and status (on vEdge routers only).

Command Syntax

show cellular modem

Syntax Description

None

Command History

Release	Modification
16.1.	Command introduced.

Examples

Show cellular modem

```
vEdge# show cellular modem
Modem model number      : MC7354
Firmware version        : SWI9X15C_05.05.58.01
Firmware date           : 2015/03/05 00:02:40
Package                 : 05.05.58.01_ABC_005.029_000
Hardware version        : 1.0
Modem status            : Online
Modem temperature       : 46 deg C
International mobile subscriber identity (IMSI)  : 001010123456799
International mobile equipment identity (IMEI)   : 111115050450742
Integrated circuit card ID (ICCID)               : 89860600502000180724
Mobile subscriber ISDN (MSISDN)                  : 6508338332
Electronic serial number (ESN)                   : 809D9CD1
```

Related Topics

cellular
clear cellular errors, on page 24
clear cellular session statistics, on page 25
profile
show cellular network, on page 203
show cellular profiles, on page 205
show cellular radio, on page 206
show cellular sessions, on page 207
show cellular status, on page 208
show interface, on page 265

show cellular network

show cellular network—Display cellular network information (on vEdge routers only).

Command Syntax

show cellular network

Syntax Description

None

Command History

Release	Modification
16.1.	Command introduced.
16.2.	Added support for 2G and 3G technologies.

Examples

For CDMA networks:

Show cellular network

```
vEdge# show cellular network

Registration status                 Registered
Roaming status                      @Home
Packet-switched domain state        Attached
System ID, SID                      32766
Network ID, NID                     616
Base station ID, BID                882
```

For GSM networks:

```
vEdge# show cellular network

Registration status                 Registered
Roaming status                      @Home
Packet-switched domain state        Attached
Mobile country code, MCC            311
Mobile network code, MNC            480
Network name                        CompanyX
Cell ID                             84759830
Location area code, LAC             56997
```

For HDR networks:

```
vEdge# show cellular network

Registration status                 Registered
Roaming status                      @Home
Packet-switched domain state        Attached
```

For LTE networks:

```
vEdge# show cellular network

Registration status                   Registered
Roaming status                        @Home
Packet-switched domain state          Attached
Mobile country code, MCC              311
Mobile network code, MNC              480
Network name                          CompanyX
EPS Mobility Management (EMM) state   Registered
   EMM substate                       Normal Service
   EMM connection state               RRC Idle
Cell ID                               84759830
Tracking area code, TAC               7936
```

For WCDMA networks:

```
vEdge# show cellular network

Registration status                  Registered
Roaming status                       @Home
Packet-switched domain state         Attached
Mobile country code, MCC             311
Mobile network code, MNC             480
Network name                         CompanyX
Cell ID                              84759830
Location area code, LAC              56997
Primary scrambling code, PSC         169
```

Related Topics

cellular
clear cellular errors, on page 24
clear cellular session statistics, on page 25
profile
show cellular modem, on page 202

show cellular profiles

show cellular profiles—Display cellular profile information (on vEdge routers only).

Command Syntax

show cellular profiles

Syntax Description

None

Command History

Release	Modification
16.1.	Command introduced.

Examples

Show cellular profiles

```
vEdge# show cellular profiles
           PROFILE  PDN                                                    PRIMARY  SECONDARY
  USER
INTERFACE  ID       TYPE   APN                NAME        AUTH  IP ADDR  DNS      DNS
   NAME
-------------------------------------------------------------------------------------------
cellular0  1        IPv46  ims                profile_1   None  0.0.0.0  0.0.0.0  0.0.0.0
   -
cellular0  2        IPv4   admin              profile_2   None  0.0.0.0  0.0.0.0  0.0.0.0
   -
cellular0  3        IPv4   internet           profile_3   None  0.0.0.0  0.0.0.0  0.0.0.0
   -
```

Related Topics

cellular
clear cellular errors, on page 24
clear cellular session statistics, on page 25
profile
show cellular modem, on page 202
show cellular network, on page 203
show cellular radio, on page 206
show cellular sessions, on page 207

show cellular status, on page 208
show interface, on page 265

show cellular radio

show cellular radio—Display cellular radio band information (on vEdge routers only).

Command Syntax

show cellular radio

Syntax Description

None

Command History

Release	Modification
16.1.	Command introduced.

Examples

```
vEdge# show cellular radio

Radio mode                                    LTE
Frequency band                                2
Bandwidth                                     20 MHz
Transmit channel                              18800
Receive channel                               800
Received signal strength indicator (RSSI)     -63 dBm
Reference signal receive power (RSRP)         -89 dBm, Excellent
Reference signal receive quality (RSRQ)       -8 dB, Excellent
Signal-to-noise ratio (SNR)                   14.8 dB, Poor
```

Related Topics

cellular
clear cellular errors, on page 24
clear cellular session statistics, on page 25
profile
show cellular modem, on page 202
show cellular network, on page 203
show cellular profiles, on page 205
show cellular sessions, on page 207
show cellular status, on page 208
show interface, on page 265

show cellular sessions

show cellular sessions—Display cellular session information (on vEdge routers only).

Command Syntax

show cellular session

Syntax Description

None

Command History

Release	Modification
16.1.	Command introduced.

Examples

Show cellular sessions

```
vEdge# show cellular sessions

Data bearer                : LTE
Dormancy state             : Active
Active profile             : 3

IPv4                       :
   Assigned address        : 100.82.104.116/29
   Gateway                 : 100.82.104.117
   Primary DNS server      : 198.224.173.135
   Secondary DNS server    : 198.224.174.135

Rx packets: 82625599, drops: 0, errors: 0, overflows: 0
Tx packets: 83601165, drops: 0, errors: 0, overflows: 0

Rx octets: 24259339642, TX octets: 24233263286
```

Related Topics

cellular
clear cellular errors, on page 24
clear cellular session statistics, on page 25
profile
show cellular modem, on page 202
show cellular network, on page 203
show cellular profiles, on page 205
show cellular radio, on page 206
show cellular status, on page 208
show interface, on page 265

show cellular status

show cellular status—Display cellular status information (on vEdge routers only).

Command Syntax

show cellular status

Syntax Description

None

Command History

Release	Modification
16.1.	Command introduced.

Examples

Show cellular status

```
vEdge# show cellular status

                         SIM     RADIO  SIGNAL
INTERFACE  MODEM STATUS  STATUS  MODE   STRENGTH   NETWORK STATUS  LAST SEEN ERROR
-------------------------------------------------------------------------------------
cellular0  Online        Ready   LTE    Excellent  Registered      None
```

Related Topics

cellular
clear cellular errors, on page 24
clear cellular session statistics, on page 25
profile
show cellular modem, on page 202
show cellular network, on page 203
show cellular profiles, on page 205
show cellular radio, on page 206
show cellular sessions, on page 207
show interface, on page 265

show certificate installed

show certificate installed—Display the decoded certificate signing request installed on a vBond orchestrator, vManage NMS or vSmart controller. This is the CSR that has been signed by the root CA. Information displayed includes the serial number, the signature algorithm, the issuer, the certificate validity, the public key algorithm and public key, and the signature algorithm.

On a vEdge router, display the board ID certificate.

Command Syntax

show certificate installed

Syntax Description

None

Command History

Release	Modification
14.2.	Command introduced.
15.3.5.	Added command support on vEdge routers.

Examples

Show certificate installed

```
vSmart# show certificate installed
Certificate:
    Data:
        Version: 1 (0x0)
        Serial Number: 305419779 (0x12345603)
    Signature Algorithm: sha1WithRSAEncryption
        Issuer: C=US, ST=California, L=San Jose, OU=vIPtela Test, O=Viptela
Inc/emailAddress=us@viptela.com
        Validity
            Not Before: Jul 31 15:44:56 2014 GMT
            Not After : Jul 31 15:44:56 2015 GMT
        Subject: L=San Jose, C=US, ST=California, O=vIPtela Inc, OU=Viptela Inc,
CN=VSmart_47af63a3-788a-4c84-b5a7-fbb74eca57db.viptela.com
        Subject Public Key Info:
            Public Key Algorithm: rsaEncryption
                Public-Key: (2048 bit)
                Modulus:
                    00:a1:9d:a7:5c:ed:7f:56:e7:ce:32:82:ea:e9:9f:
                    71:d8:14:79:c7:80:0c:22:c4:a4:25:98:6a:0e:49:
                    4a:79:7f:60:a2:73:e7:89:c4:db:73:87:97:6a:9c:
                    42:e8:39:46:1d:9b:00:4b:fb:c0:3c:dc:20:97:d3:
                    8c:1b:d1:7a:03:43:73:65:38:fa:5a:31:2b:4e:d2:
                    e2:0e:16:ae:05:1a:33:b6:fd:58:5f:c9:86:e3:83:
                    b3:07:16:30:34:e9:dc:8a:fe:a7:d8:b6:ee:d7:59:
                    24:1e:9f:30:b8:bb:99:da:b6:56:94:7f:61:f3:5d:
                    9a:3f:39:4d:6f:24:1e:84:db:39:6a:ca:23:94:f3:
                    14:61:7b:d8:d1:45:52:65:e9:17:71:3d:91:a3:1c:
                    45:ba:1a:28:48:ca:17:63:4d:dc:ff:13:8e:84:65:
                    94:8a:3c:44:49:f2:2f:e9:ec:70:e6:cc:f5:23:a7:
                    f4:5d:2f:0d:6a:ec:ce:19:90:af:df:ad:90:76:fa:
                    1b:86:12:51:d1:9f:6a:86:4b:ab:62:d8:5a:cb:35:
                    74:f1:36:09:b8:8c:78:be:1d:eb:9b:b3:5a:79:c6:
                    80:ad:57:55:a9:36:bf:9c:9d:fb:e5:f7:bd:a5:10:
                    e3:4f:b0:d4:7a:a0:e4:59:47:a4:82:c5:eb:d1:71:
                    48:13
                Exponent: 65537 (0x10001)
```

```
        X509v3 extensions:
            X509v3 Subject Alternative Name:
                DNS:VSmart_05_02_2014_22_33_15_077740428.viptela.com
            X509v3 Basic Constraints:
                CA:FALSE
            X509v3 Key Usage: critical
                Digital Signature, Key Encipherment
            X509v3 Extended Key Usage:
                TLS Web Server Authentication, TLS Web Client Authentication
            X509v3 Certificate Policies:
                Policy: 2.16.840.1.113733.1.7.54
                  CPS: https://www.verisign.com/cps

            X509v3 Authority Key Identifier:
                keyid:0D:44:5C:16:53:44:C1:82:7E:1D:20:AB:25:F4:01:63:D8:BE:79:A5

            X509v3 CRL Distribution Points:

                Full Name:
                  URI:http://SVRSecure-G3-crl.verisign.com/SVRSecureG3.crl

            Authority Information Access:
                OCSP - URI:http://ocsp.verisign.com
                CA Issuers - URI:http://SVRSecure-G3-aia.verisign.com/SVRSecureG3.cer

    Signature Algorithm: sha1WithRSAEncryption
         67:e5:65:5e:75:de:2f:68:9c:37:96:79:dc:91:9d:a9:ef:99:
         93:5e:9a:33:5a:79:cb:b6:84:fe:0b:83:ad:12:a3:04:fb:b7:
         ee:fd:52:9d:68:cc:1c:15:3a:f7:93:8d:cb:ea:a5:ab:4e:86:
         bd:c5:17:df:6f:0b:3c:35:d3:a2:da:c4:1a:9d:d4:34:79:28:
         c2:20:06:ea:6c:99:45:71:cc:85:0a:a2:7f:80:48:2c:25:22:
         e1:da:16:f6:7a:9a:1b:17:84:27:a1:52:ab:84:5c:2d:b0:6f:
         f7:c5:ff:73:6a:f0:19:6e:e5:83:98:59:d3:03:7e:24:f8:bf:
         c6:47:66:6e:80:fd:d6:ee:56:1d:9b:c0:00:f2:38:e5:7d:49:
         19:37:6b:32:79:83:49:b2:d9:06:0f:ba:26:04:d1:8b:ee:dd:
         1a:81:26:1a:c8:a3:77:59:76:06:76:42:76:4e:57:22:97:c8:
         c1:2a:95:f8:8a:f7:10:e7:43:08:d9:61:96:00:6e:55:7f:89:
         6b:c4:03:c9:7d:03:f1:46:23:a0:ff:98:79:84:f8:96:8a:6a:
         56:4d:85:20:ae:89:07:08:33:31:04:c2:9a:c3:29:38:5f:09:
         ed:a2:1a:e2:d0:9b:af:8e:0d:d5:89:b5:43:c2:02:e1:cc:82:
         db:70:f0:4c
```

Related Topics

clear installed-certificates, on page 36
show certificate root-ca-cert, on page 212
show certificate serial, on page 214
show certificate signing-request, on page 215
show certificate validity, on page 217

show certificate reverse-proxy

show certificate reverse-proxy—Display the installed proxy certificate (on vEdge routers only).

Command Syntax

show certificate reverse-proxy

Syntax Description

None

Command History

Release	Modification
18.2.	Command introduced.

Examples

Show certificate reverse-proxy

Examples

```
vEdge# show certificate reverse-proxy  Reverse proxy
certificate--------------------------Certificate:    Data:        Version: 1 (0x0)
Serial Number: 1 (0x1)    Signature Algorithm: sha256WithRSAEncryption        Issuer: C=US,
 ST=California, O=Viptela, OU=ViptelaVmanage, CN=813fd02c-acca-4c19-857b-119da60f257f
   Validity            Not Before: Jan 29 20:11:09 2018 GMT            Not After : Jan 23
20:11:09 2048 GMT        Subject: C=US, ST=California,
CN=e4f6f85a-f0ef-4923-a239-6d08a58fa7a3, O=ViptelaClient        Subject Public Key Info:
          Public Key Algorithm: rsaEncryption                Public-Key: (2048 bit)
         Modulus:                    00:cb:33:1a:fd:25:5f:e5:77:f3:18:fb:6c:70:25:
            47:0d:41:5b:95:8a:5f:48:b7:98:9f:ad:22:09:93:
b6:ca:f0:8e:5e:2e:04:9d:33:3e:b9:07:36:b3:99:
16:20:7c:81:48:1a:b3:1d:36:89:15:d0:24:e6:43:
8a:eb:d4:a9:44:b0:17:b3:23:10:c7:e7:19:84:ee:
4b:42:d9:14:43:75:dd:b6:59:01:6f:15:bb:4d:fe:
39:bd:41:30:bd:cb:02:e7:4a:29:c2:f9:8f:95:c9:
59:bc:24:55:33:29:da:42:1f:d0:27:25:1c:b9:b0:
35:f6:54:55:d6:e4:3c:30:a4:f9:aa:18:52:34:ee:
8f:19:ba:fa:62:4f:ee:db:ce:c4:c6:56:12:70:de:
94:1b:3d:35:c0:fb:38:55:dd:7e:1e:bd:00:ff:55:
f1:7a:bf:3d:e1:24:2b:e1:7a:d8:e1:b3:9c:46:bd:
0a:67:0a:12:10:1b:ef:09:71:91:95:7d:8a:26:c8:
d3:c4:d7:ed:27:ea:08:29:7c:f3:77:93:ab:78:df:
4c:0a:8d:2c:1e:31:17:76:6e:1f:e9:27:78:ed:cf:
d9:5b:8a:dd:59:67:a2:63:37:dc:86:e0:0f:03:44:
16:0b:fa:fa:3c:4a:11:30:3f:1c:80:8f:b9:73:a9:                    f0:91
Exponent: 65537 (0x10001)    Signature Algorithm: sha256WithRSAEncryption
58:81:4d:02:ef:a6:a5:78:ee:02:bc:58:2e:b2:6d:cc:55:34:
02:fe:10:38:dc:67:d9:71:96:9d:01:af:f6:0c:0f:61:e6:12:
92:ee:6b:1f:cf:72:1c:ab:b8:a5:98:d8:22:05:17:6f:6e:e0:
4c:65:d3:05:60:20:b9:ab:6d:66:bf:ca:39:45:4e:8b:ef:02:
37:ff:25:22:9d:eb:95:b4:4e:72:5b:42:c5:c7:61:8e:14:5c:
92:dc:d8:90:aa:d4:29:8b:f8:9e:e8:8b:48:c1:0e:80:f7:e4:
2c:e3:9a:ba:62:63:ab:df:ca:f3:5e:06:2f:1b:69:e6:d4:da:
f8:dc:44:99:a6:45:33:a5:3e:4a:af:6f:f7:bb:ff:fd:66:bd:
71:32:89:45:5e:42:c8:66:07:3e:f4:17:65:fb:f4:e8:5b:7f:
dc:4f:34:da:a3:cf:15:6e:00:4a:69:a3:c3:9a:55:7c:8e:e5:
d7:ae:86:d2:40:a5:c1:f6:82:e8:ef:a2:8c:c5:db:50:cf:cb:
d8:ee:2b:82:9e:da:17:12:16:ae:61:8e:32:17:e4:dd:29:60:
95:50:c8:bd:b8:ab:93:72:ff:13:58:85:85:c2:70:29:71:8f:
5d:8e:ae:ce:48:34:14:3f:24:d1:6e:51:c9:75:7d:78:fd:f6:         77:2f:38:36
```

Related Topics

show certificate reverse-proxy, on page 210
show control connections, on page 227

show certificate root-ca-cert

show certificate root-ca-cert—Display the root certificate installed on a Cisco vEdge device. Information displayed includes the serial number, the signature algorithm, the issuer, the certificate validity, the public key algorithm and public key, and the signature algorithm.

Command Syntax

show certificate root-ca-cert

Syntax Description

None

Command History

Release	Modification
14.2.	Command introduced.

Examples

Show certificate root-ca-cert

```
vSmart# show certificate root-ca-cert
Certificate:
    Data:
        Version: 3 (0x2)
        Serial Number: 16071262098767155600 (0xdf0897bac9371190)
    Signature Algorithm: sha1WithRSAEncryption
        Issuer: C=US, ST=California, L=San Jose, OU=Viptela Inc, O=Viptela
Inc/emailAddress=us@viptela.com
        Validity
            Not Before: Jul 31 15:44:06 2014 GMT
            Not After : Jul 28 15:44:06 2024 GMT
        Subject: C=US, ST=California, L=San Jose, OU=Viptela Inc, O=Viptela
Inc/emailAddress=us@viptela.com
        Subject Public Key Info:
            Public Key Algorithm: rsaEncryption
                Public-Key: (2048 bit)
                Modulus:
                    00:b9:20:3e:f3:65:e7:18:42:cd:09:f9:6c:9b:3d:
                    0d:a8:8e:e0:44:f7:3f:9b:05:86:df:3b:cf:ab:2b:
                    a4:a6:24:c6:8a:b4:f7:af:21:b3:db:8f:38:03:6a:
                    da:63:f3:15:c5:68:af:9b:96:85:e7:80:3a:1a:7e:
                    04:50:77:91:fa:64:a7:93:c5:90:4f:9a:7e:84:d4:
                    e1:2a:02:af:0d:15:7f:10:14:28:6a:ff:0c:7b:f1:
                    48:4f:ca:2d:c1:6a:3b:f0:89:57:d9:9c:bf:8c:36:
                    ef:0f:ae:69:6a:e5:55:a9:58:c9:de:2b:a1:12:fe:
                    a9:df:9e:61:c5:31:ce:a7:f9:49:37:b6:be:5c:37:
                    aa:e5:98:1c:cf:7b:b1:c3:cc:20:69:90:b3:02:dc:
                    d1:4d:8c:00:26:e7:49:a7:3b:e4:73:3d:78:96:f4:
                    c5:be:47:17:d3:57:de:b3:c5:70:ab:fd:20:1e:51:
                    c7:95:31:0b:1d:50:53:06:6c:28:0d:25:b5:62:e2:
                    c8:fe:bc:ea:8f:71:8f:4a:ea:d1:d0:56:ef:a0:3a:
                    1f:55:a7:c6:88:03:68:41:cd:fe:60:50:77:8c:5c:
```

```
                    35:4e:90:9d:db:b4:8d:73:b6:a0:f0:b0:29:03:f3:
                    eb:b1:cc:d8:bd:ed:ee:68:cb:77:8d:ef:2c:21:21:
                    94:f9
                Exponent: 65537 (0x10001)
        X509v3 extensions:
            X509v3 Basic Constraints:
                CA:TRUE
            X509v3 Subject Key Identifier:
                91:04:EB:99:69:73:EB:4F:6C:E1:F2:B4:7F:D4:21:E4:D4:54:56:ED
            X509v3 Authority Key Identifier:
                keyid:91:04:EB:99:69:73:EB:4F:6C:E1:F2:B4:7F:D4:21:E4:D4:54:56:ED
                DirName:/C=US/ST=California/L=San Jose/OU=Viptela Inc/O=Viptela
Inc/emailAddress=us@viptela.com
                serial:DF:08:97:BA:C9:37:11:90

    Signature Algorithm: sha1WithRSAEncryption
         71:a3:64:ee:8a:36:fa:05:60:bb:dd:38:30:c7:39:78:aa:1d:
         4f:14:f6:7c:06:13:41:6f:3a:07:89:be:65:63:fc:08:c6:1f:
         49:99:2b:a7:33:65:83:67:22:e4:d6:e4:78:bd:19:d8:95:33:
         60:61:ac:29:b6:7e:35:9b:e6:f2:d8:57:7f:20:06:df:51:a5:
         dc:d4:83:d6:8d:1b:13:d4:c6:fe:dc:4a:1b:14:25:f4:32:3e:
         7a:d3:e9:f7:3d:fd:8f:47:9c:25:c7:4a:0c:50:99:28:24:90:
         d6:6a:27:eb:a2:28:4d:55:74:98:9c:a8:d6:6d:c6:be:2b:43:
         6e:18:22:64:94:4b:f2:21:fa:d4:fc:33:da:ce:ea:0a:f5:c4:
         24:c2:51:fb:6b:84:76:f3:d7:ac:55:df:ca:7c:88:73:89:0d:
         7e:12:55:5e:e2:0e:5e:28:27:45:66:a4:36:02:09:c0:d0:ae:
         41:5d:54:22:9b:29:f1:84:3e:67:a1:aa:3f:32:83:27:0a:75:
         2b:16:ed:b3:91:aa:e5:24:8f:45:4f:14:7b:0e:f7:05:ef:2e:
         d5:03:29:e7:18:81:a6:7c:c9:1e:38:b1:7a:00:c8:34:e0:ab:
         b7:8d:3a:36:d5:70:11:e2:d1:43:1c:8c:da:32:b8:29:08:31:
         e8:b2:e0:b2
```

Related Topics

show certificate installed, on page 208
show certificate serial, on page 214
show certificate validity, on page 217

show certificate root-ca-crl

To display the decoded CRL of the installed root certificate authority, use the **show certificate root-ca-crl** command in privileged EXEC mode.

show certificate root-ca-crl

Command Modes

Privileged EXEC

Command History

Release	Modification
Cisco SD-WAN Release 20.7.1	This command was introduced.

Examples

The following is sample output from the **show certificate root-ca-crl** command showing the decoded CRL of the installed root certificate authority

```
vEdge # show certificate root-ca-crl
Certificate Revocation List (CRL):
```

```
        Version 2 (0x1)
        Signature Algorithm: sha256WithRSAEncryption
        Issuer: C=US, ST=California, L=San Jose, OU=CA, O=Company
LLC/emailAddress=support@ca.com, CN=CA CA
        Last Update: Sep 24 21:06:00 2021 GMT
        Next Update: Oct 24 21:06:00 2021 GMT
        CRL extensions:
            X509v3 CRL Number:
                3
Revoked Certificates:
    Serial Number: 1234
        Revocation Date: Sep 24 15:40:33 2021 GMT
    Serial Number: 1235
        Revocation Date: Sep 24 20:34:48 2021 GMT
    Serial Number: 1236
        Revocation Date: Sep 24 21:06:00 2021 GMT
    Signature Algorithm: sha256WithRSAEncryption
         a3:2d:7a:3c:7f:57:15:6d:9d:29:16:14:56:6e:3a:75:e8:d5:
         1f:3c:dd:a5:1e:25:44:0c:2a:3d:5d:e9:a0:89:ca:b9:e3:11:
         92:79:aa:35:2a:2d:f2:b8:00:0d:65:6e:d7:bf:89:bf:cf:26:
        14:3c:e3:00:f2:f0:e3:db:38:a9:28:5b:c5:0e:f9:2f:ce:ec:
         3f:49:7d:00:6c:df:08:de:c9:ed:8e:d7:ae:09:c9:c1:f2:f1:
         02:fb:6c:b2:cc:c9:f6:71:3d:fa:8e:6f:e3:f2:62:62:ee:53:
         02:3c:61:6d:7b:df:58:f0:4f:f8:53:5e:6f:ab:02:d4:c4:29:
```

show certificate serial

show certificate serial—Display the serial number for a vBond orchestrator or a vSmart controller. Display the serial number and chassis number for a vEdge router.

Command Syntax

show certificate serial

Syntax Description

None

Command History

Release	Modification
14.1.	Command introduced.

Examples

Show certificate serial

```
vEdge# show certificate serial
Chassis num =  11O2136130018   Board_id_serial_num : 10000161
```

Related Topics

request vsmart-upload serial-file, on page 156

show certificate signing-request

show certificate signing-request—Display the certificate signing requests installed on a vBond orchestrator, vManage NMS, or vSmart controller. This CSR is the one that has been signed by the device's private key.

Command Syntax

show certificate signing-request [**decoded**]

Syntax Description

None	Display the certificate signing request hash.
decoded	Decoded Certificate Signing Request Display the decrypted hashed certificate signing request.

Command History

Release	Modification
14.2.	Command introduced.

Examples

```
vSmart# show certificate signing-request
-----BEGIN CERTIFICATE REQUEST-----
MIIDUzCCAjsCAQAwgdIxCzAJBgNVBAYTAlVTMRMwEQYDVQQIEwpDYWxpZm9ybmlh
MREwDwYDVQQHEwhTYW4gSm9zZTEfMB0GA1UECxMWdklQdGVsYSBJbmMgUmVncmVz
c2lvbjEUMBIGA1UEChMLdklQdGVsYSBJbmMxQDA+BgNVBAMUN1ZTbWFydF80N2Fm
NjNhMy03ODhhLTRjODQtYjVhNy1mYmI3NGVjYTU3ZGIudmlwdGVsYS5jb20xIjAg
BgkqhkiG9w0BCQEWE3N1cHBvcnRAdmlwdGVsYS5jb20wggEiMA0GCSqGSIb3DQEB
AQUAA4IBDwAwggEKAoIBAQChnadc7X9W584ygurpn3HYFHnHgAwixKQlmGoOSUp5
f2Cic+eJxNtzh5dqnELoOUYdmwBL+8A83CCX04wb0XoDQ3NlOPpaMStO0uIOFq4F
GjO2/VhfyYbjg7MHFjA06dyK/qfYtu7XWSQenzC4u5natlaUf2HzXZo/OU1vJB6E
2zlqyiOU8xRhe9jRRVJl6RdxPZGjHEW6GihIyhdjTdz/E46EZZSKPERJ8i/p7HDm
zPUjp/RdLwlq7M4ZkK/frZB2+huGElHRn2qGS6ti2FrLNXTxNgm4jHi+Heubs1p5
xoCtV1WpNr+cnfvl972lEONPsNR6oORZR6SCxevRcUgTAgMBAAGgOzA5BgkqhkiG
9w0BCQ4xLDAqMAkGA1UdEwQCMAAwHQYDVR0OBBYEFBKI38vS/QQkgzzLzxAgyd2P
BVGkMA0GCSqGSIb3DQEBBQUAA4IBAQBbot83yN3VE2XpHqOKnxU6vce0expT4dOn
Idl4L0ftZ39FoubcHKw6cwPjEj9GVV4xBnEsdkYGguiaT/fmpsYMNnEIyeb4pGyy
yuw3L4JpmXPcisY/EDq9VV2nMWTXPTYxNuu2kc/q20kFMyfZcALsZiBt4YEegKHG
3d3KCxwLBmMTLkfK/wFeYXnWYu648aVCWoCywUQNqMQwKzXcznGw86ahMhQl80Ij
ARv0+DmLTWVjSLU1VZSZBQS57M9FeycRm/qfeJVqYj3UXVwSKkAZA2WGg4k88+ty
fsfUQzxBI03GRYlqVJqMsI017S89COXZPnoVCaC05RCqV+jcTZCd
-----END CERTIFICATE REQUEST-----
```

```
vSmart# show certificate signing-request decoded
Certificate Request:
    Data:
        Version: 0 (0x0)
        Subject: C=US, ST=California, L=San Jose, OU=vIPtela Inc Regression, O=Viptela,
Inc., CN=VSmart_7336ac9b-88b5-4124-bc53-3cf0916119ea.viptela.com/emailAddress=us@viptela.com

        Subject Public Key Info:
            Public Key Algorithm: rsaEncryption
                Public-Key: (2048 bit)
                Modulus:
                    00:bf:65:1c:cb:e4:d5:4d:72:b8:6c:ec:36:5b:7f:
                    ed:4c:24:a8:85:e8:3a:53:04:b0:69:65:05:6e:8c:
                    bc:0f:42:5c:9b:c4:95:ab:8d:30:09:da:84:49:4b:
                    bb:57:f0:5a:f1:58:d1:09:61:91:3b:92:0f:f2:ba:
                    ca:2a:ab:0a:59:f1:c6:15:2c:92:8c:d8:7b:bd:7d:
                    94:c7:e8:a3:3d:e0:f6:1b:f1:ca:fd:be:a8:ff:d3:
                    3d:5d:60:06:df:a4:aa:3d:b7:c2:e2:20:9d:e0:a1:
                    02:0c:74:c4:8c:9b:b9:1e:3f:18:96:8b:1e:b5:40:
                    6f:cc:16:2c:28:51:7b:fa:62:13:d1:17:34:fd:6c:
                    f9:30:85:cd:dd:17:ae:78:d7:bd:ec:9c:2d:73:b5:
                    c9:04:c7:ca:dc:33:c0:bb:74:6f:45:a4:9c:05:36:
                    1b:de:6d:c9:9a:23:31:84:40:3c:61:3d:ce:ae:17:
                    1f:4f:06:10:50:c8:b0:f8:67:2a:b8:c1:32:c9:c0:
                    af:cc:b0:2e:43:46:f2:11:0b:42:cd:5c:a1:ae:3a:
                    cf:ba:e6:c9:09:15:32:46:d1:69:8e:8c:3f:fd:f7:
                    f2:12:3c:42:00:4e:48:61:39:24:2f:b5:10:14:08:
                    3d:bc:83:87:ea:7d:81:c8:cb:28:07:02:1c:3d:c8:
                    6f:49
                Exponent: 65537 (0x10001)
        Attributes:
        Requested Extensions:
            X509v3 Basic Constraints:
                CA:FALSE
            X509v3 Subject Key Identifier:
                F1:9E:E9:7C:5A:74:8C:C9:C5:8F:41:D1:9F:BB:4C:7D:8C:4C:C1:12
    Signature Algorithm: sha1WithRSAEncryption
         0b:45:35:41:32:0a:7e:fc:d7:b4:42:dd:11:56:7c:65:03:cb:
         74:41:3c:ac:95:4d:98:9f:28:b7:ac:8d:fd:71:a0:d2:f5:8d:
         d9:d9:34:33:de:74:17:7e:61:00:4f:92:82:06:b1:b1:06:6e:
         6d:43:7e:6c:b0:43:ed:9d:65:cc:ca:24:30:7b:bc:51:36:c4:
         aa:cd:fa:42:75:96:df:6a:74:07:42:d5:e1:d7:99:50:70:b5:
         d5:ff:7d:c5:fd:14:48:f7:a3:c3:f6:80:9e:7c:47:50:2b:fe:
         87:dd:78:fd:19:57:d3:5e:d3:0e:45:5e:30:36:56:69:c3:5d:
         80:b6:3d:ff:3a:35:e0:ad:f4:1d:8e:cf:ea:c6:f9:cf:ce:01:
         15:76:c3:ce:5b:f7:86:2f:57:18:0a:11:81:a4:e3:bf:db:b9:
         dd:9d:51:1b:f9:94:b5:0d:3c:28:c2:f3:54:c8:15:05:83:47:
         37:53:ed:a7:14:70:7b:84:5d:fb:80:70:dd:c4:b4:fe:88:f4:
         7d:43:d2:65:70:85:73:50:20:6c:7f:3a:fc:c2:a4:0a:eb:3d:
         79:e9:99:05:b5:45:2e:cb:e3:9c:ab:e8:22:79:7e:89:03:90:
         5e:da:13:3e:1e:18:45:1f:9d:ca:2b:33:7d:73:85:09:a8:2a:
         ad:66:a7:b7
```

Related Topics

show certificate installed, on page 208
show certificate root-ca-cert, on page 212
show certificate serial, on page 214
show certificate validity, on page 217

show certificate validity

show certificate validity—Display how long a certificate is valid for (on vSmart controllers and vBond orchestrators only).

Command Syntax

show certificate validity

Syntax Description

None

Command History

Release	Modification
14.1.	Command introduced.

Examples

Show certificate validity

```
vSmart# show certificate validity
The certificate is valid from  Apr 20 21:03:38 2015 GMT  (Current date is  Mon Apr 20
23:00:19 GMT 2015 )
& valid until  Apr 19 21:03:38 2016 GMT
```

Related Topics

request certificate, on page 100
show certificate installed, on page 208
show certificate root-ca-cert, on page 212
show certificate serial, on page 214
show certificate signing-request, on page 215

show cli

show cli—Display the CLI settings.

Command Syntax

show cli

Syntax Description

None

Command History

Release	Modification
14.1.	Command introduced.

Examples

Show cli

```
vEdge# show cli
autowizard             false
complete-on-space      false
history                100
idle-timeout           1800
ignore-leading-space   true
output-file            terminal
paginate               true
prompt1                \h\M#
prompt2                \h(\m)#
screen-length          43
screen-width           85
service prompt config  true
show-defaults          false
terminal               xterm-256color
timestamp              disable
```

Related Topics

complete-on-space, on page 66
history, on page 81
idle-timeout, on page 82
paginate, on page 87
prompt1, on page 92
prompt2, on page 93
screen-length, on page 157
screen-width, on page 157
timestamp, on page 487

show clock

show clock—Display the system time.

Command Syntax

show clock

Syntax Description

None	Display time in the local timezone.

	universal Display time in UTC.

Command History

Release	Modification
14.1.	Command introduced.
14.2.	Introduced **universal** option.

Examples

Show clock

```
vEdge# show clock
Mon Jul  7 13:36:00 PDT 2014
vEdge# show clock universal
Mon Jul  7 20:36:05 UTC 2014
```

Related Topics

show uptime, on page 474
timestamp, on page 487

show cloudexpress applications

show cloudexpress applications—Display the best path for applications configured with Cloud OnRamp for SaaS (formerly called CloudExpress service) (on vEdge routers only). The best path could be a local interface with Direct Internet Access (DIA), or the path to a remote gateway.

Command Syntax

show cloudexpress applications *vpn-id*

Syntax Description

None	Display the best interface for all applications in all VPNs configured with Cloud OnRamp for SaaS.
vpn-id	Specific VPN Display the best interface for all applications in VPN x configured with Cloud OnRamp for SaaS.

Command History

Release	Modification
16.3.	Command introduced.

Examples

Show cloudexpress applications

```
vEdge# show cloudexpress applications

                                EXIT     GATEWAY
LOCAL  REMOTE
VPN  APPLICATION                TYPE     SYSTEM IP      INTERFACE  LATENCY  LOSS
COLOR  COLOR
-------------------------------------------------------------------------------------
1    salesforce                 gateway  172.16.255.14  -          103      1
lte    lte
1    google_apps                gateway  172.16.255.14  -          47       0
lte    lte
```

Related Topics

clear cloudexpress computations, on page 26
show cloudexpress gateway-exits, on page 220
show cloudexpress local-exits, on page 221
show omp cloudexpress, on page 344

show cloudexpress gateway-exits

show cloudexpress gateway-exits—Display loss and latency on each gateway exit for applications configured with Cloud OnRamp for SaaS (formerly called CloudExpress service) (on vEdge routers only).

Command Syntax

show cloudexpress gateway-exits *vpn-id*

Syntax Description

None	Display loss and latency on each gateway exit for all applications in all VPNs configured with Cloud OnRamp for SaaS.
vpn-id	Specific VPN Display loss and latency on each gateway exit for all applications in VPN x configured with Cloud OnRamp for SaaS.

Command History

Release	Modification
16.3	Command introduced.

Examples

```
vEdge# show cloudexpress gateway-exits

                                                                                LOCAL   REMOTE
VPN  APPLICATION              GATEWAY IP                LATENCY  LOSS  COLOR   COLOR
-------------------------------------------------------------------------------------------
1    salesforce               172.16.255.14             72       2     lte     lte
1    google_apps              172.16.255.14             16       0     lte     lte
```

Related Topics

clear cloudexpress computations, on page 26
show cloudexpress applications, on page 219
show cloudexpress local-exits, on page 221
show omp cloudexpress, on page 344

show cloudexpress local-exits

show cloudexpress local-exits—Display application loss and latency on each Direct Internet Access (DIA) interface enabled for Cloud OnRamp for SaaS (formerly called CloudExpress service) (on vEdge routers only).

Command Syntax

show cloudexpress local-exits *vpn-id*

Syntax Description

None	Display application loss and latency for all applications on all DIA interfaces in all VPNs enabled for Cloud OnRamp for SaaS.
vpn-id	Specific VPN Display application loss and latency for all applications on all DIA interfaces in a specific VPN enabled for Cloud OnRamp for SaaS.

Command History

Release	Modification
16.3	Command introduced.

Examples

Show cloudexpress local-exits

```
vEdge# show cloudexpress local-exits

VPN  APPLICATION              INTERFACE                 LATENCY  LOSS
-----------------------------------------------------------------------
```

```
100  salesforce              ge0/0                   89       7
100  salesforce              ge0/2                   80       5
100  office365               ge0/0                   62       3
100  office365               ge0/2                   74       1
100  amazon_aws              ge0/0                   98       6
100  amazon_aws              ge0/2                   107      6
100  oracle                  ge0/0                   75       3
100  oracle                  ge0/2                   81       5
100  sap                     ge0/0                   54       3
100  sap                     ge0/2                   60       4
100  box_net                 ge0/0                   28       2
100  box_net                 ge0/2                   18       3
100  dropbox                 ge0/0                   19       1
100  dropbox                 ge0/2                   31       1
100  jira                    ge0/0                   92       6
100  jira                    ge0/2                   102      3
100  intuit                  ge0/0                   44       2
100  intuit                  ge0/2                   37       8
100  concur                  ge0/0                   76       5
100  concur                  ge0/2                   71       3
100  zoho_crm                ge0/0                   25       1
100  zoho_crm                ge0/2                   20       1
100  zendesk                 ge0/0                   7        1
100  zendesk                 ge0/2                   15       0
100  gotomeeting             ge0/0                   31       2
100  gotomeeting             ge0/2                   21       2
100  webex                   ge0/0                   66       2
100  webex                   ge0/2                   62       3
100  google_apps             ge0/0                   31       0
100  google_apps             ge0/2                   31       1
```

Related Topics

show cloudexpress local-exits, on page 221

show configuration commit list

show configuration commit list—Display a list of all configuration commits on the Cisco vEdge device.

Command Syntax

show configuration commit list [*number*]

Syntax Description

None	List information about all the configuration commits.
number	Specific Number of Commits List information about the specified number of configuration commits.

Command History

Release	Modification
14.1.	Command introduced.

Examples

Show configuration commit list

```
vEdge# show configuration commit list
2013-12-06 18:39:20
SNo. ID       User       Client      Time Stamp          Label       Comment
~~~~ ~~       ~~~~       ~~~~~~      ~~~~~~~~~~          ~~~~~       ~~~~~~~
0    10008    admin      cli         2013-12-06 18:39:09             add banner text
1    10007    admin      cli         2013-12-06 18:03:08
2    10006    admin      cli         2013-12-06 18:02:14
3    10005    admin      cli         2013-12-06 17:24:08
4    10004    admin      cli         2013-12-06 10:57:26
5    10003    admin      cli         2013-12-06 10:32:25
6    10002    admin      cli         2013-12-06 10:29:07
7    10001    admin      cli         2013-12-06 10:28:53
8    10000    admin      cli         2013-12-06 10:28:53 Software Release Information
```

Related Topics

commit, on page 65

show container images

show container images—List the Cisco SD-WAN software images associated with the vSmart controller containers (on vContainer hosts only).

Command Syntax

show container images [**instances** *instance-name*]

Syntax Description

None	List information about the software images for all containers.
instances *instance-name*	Specific Container Instance List information about the software images for the specified instance.

Command History

Release	Modification
16.2.	Command introduced.

Examples

Show container images

```
vContainer# show container images

VERSION         INSTANCE
--------------------------------
```

```
99.99.999-2440  first_vsmart
                second_vsmart
99.99.999-2444  vm10
```

Related Topics

container

show container instances, on page 224

show container instances

show container instances—List information about the vSmart controller containers running on the container host (on vContainer hosts only).

Command Syntax

show container instances [*instance-parameter*]

Syntax Description

None	List information about all the vSmart controller containers running on the container host
instance-parameter	Specific Instance Parameter List information about a specific parameter for a container instance.*instance-parameter* can be one of the following, which correspond to the column headers in the command output: • **admin-state**(**down**|**up**) • **image***image-name* • **interface**(**host-ip-address***ip-address*|**ip-address***ip-address*) • **oper-state**(**down** |**up**) • **personality**device-type

Release	Modification
16.2.	Command introduced.

Examples

Show container instances

```
vContainer# show container instances

                ADMIN  OPER                                  IF                 HOST IP
NAME            STATE  STATE  IMAGE           PERSONALITY    NAME  IP ADDRESS   ADDRESS
-------------------------------------------------------------------------------------
first_vsmart    up     up     99.99.999-2440  vsmart         eth0  169.254.0.2  10.0.1.25
second_vsmart   up     up     99.99.999-2440  vsmart         eth0  169.254.0.3  10.0.1.26
vm10            up     up     99.99.999-2444  vsmart         eth0  169.254.0.1  10.0.1.30
```

```
eth1  169.254.1.1  10.0.12.20
eth2  169.254.2.1  10.2.2.20
```

Related Topics

container

show container instances, on page 224

show control affinity config

show control affinity config—Display configuration information about the control connections between the vEdge router and one or more vSmart controllers (on vEdge routers only).

Command Syntax

show control affinity config [*index* [*parameter*]]

Syntax Description

None	Display information about all control connections between the vEdge router and vSmart controllers
index[*parameter*]	Information about a Specific Parameter Display configuration information about a specific parameter, starting with the index number of the control connection. *parameter* can be one of the following: **affc-ccl** (current controller group ID list), **affc-ecl** (effective controller group ID list), **affc-equil** (equilibrium status), **affc-ervc** (count of effective required vSmart controllers), and **affc-interface** (interface name).

Release	Modification
16.1.	Command introduced.
16.2.	Display last-resort interface information.

Examples

Show control affinity config

```
vEdge# show control affinity config

EFFECTIVE CONTROLLER LIST FORMAT - G(C),...     - Where G is the Controller Group ID
                                                        C is the Required vSmart Count

CURRENT CONTROLLER LIST FORMAT   - G(c)s,...    - Where G is the Controller Group ID
                                                        c is the current vSmart count
                                                        s Status Y when matches, N when
does not match
                EFFECTIVE
                REQUIRED
 LAST-RESORT
INDEX INTERFACE VS COUNT  EFFECTIVE CONTROLLER LIST  CURRENT CONTROLLER LIST  EQUILIBRIUM
 INTERFACE
```

```
-------------------------------------------------------------------------------------------------
0     ge0/2     2           1(1),  2(1)              1(1)Y,  2(1)Y             Yes
 No
```

Related Topics

show control affinity status, on page 226
show control connections, on page 227
show control local-properties, on page 233

show control affinity status

show control affinity status—Display the status of the control connections between the vEdge router and one or more vSmart controllers (on vEdge routers only).

Command Syntax

show control affinity status [*index* [*parameter*]]

Syntax Description

None	Display information about all control connections between the vEdge router and vSmart controllers
index[*parameter*]	Information about a Specific Parameter Display configuration information about a specific parameter, starting with the index number of the control connection. *parameter* can be one of the following: **affc-acc** (assigned connected vSmart controllers), **affc-interface** (interface name), and **affs-ucc** (unassigned connected vSmart controllers).

Command History

Release	Modification
16.1.	Command introduced.

Examples

Show control affinity status

```
vEdge# show control affinity status

ASSIGNED CONNECTED CONTROLLERS   - System IP( G),..  - System IP of the assigned vSmart
                                                      G is the group ID to which
the vSmart belongs
UNASSIGNED CONNECTED CONTROLLERS - System IP( G),..  - System IP of the unassigned vSmart
                                                      G is the group ID to which
the vSmart belongs

INDEX INTERFACE ASSIGNED CONNECTED CONTROLLERS                      UNASSIGNED CONNECTED
CONTROLLERS
```

```
0     ge0/2       172.16.255.19(  1),  172.16.255.20(  2)
```

Related Topics

show control affinity config, on page 225
show control connections, on page 227
show control local-properties, on page 233

show control connection-info

show control connection-info—Display information about the control plane connections on the Cisco vEdge device.

Command Syntax

show control connection-info

Syntax Description

None

Command History

Release	Modification
14.3.	Command introduced.

Examples

Show control connection-info

```
vEdge# show control connection-info
control connection-info "Per-Control Connection Rate: 300 pps"
```

Related Topics

control-session-pps

show control connections

show control connections—Display information about active control plane connections (on vSmart controllers and vEdge routers only).

Command Syntax

show control connections [**controller-group-id** *number*] [**detail**]

show control connections *instance-id* [**vbond** | **vedge** | **vsmart**] [*parameters*] [**detail**]

Syntax Description

None	Display information about the active control plane connections to all Cisco vEdge devices in the local domain. Each connection exists on a DTLS connection between the local device and a remote device in the Cisco SD-WAN overlay network.
vbond[*parameters*]	Connections to vBond Orchestrators (On vSmart controllers only.) Display information about the active control plane connections between a vSmart controller and vBond systems in the domain. *parameters* is one or more of the column headers in the **show control connections** command output.
vedge[*parameters*]	Connections to vEdge Routers (On vSmart controllers only.) Display information about the active control plane connections between a vSmart controller and vEdge routers in the domain. *parameters* is one or more of the column headers in the **show control connections** command output. **Note** The interface marked as "last-resort" or admin down is skipped when calculating the number of control connections and partial status is determined based on the other tlocs which are UP. Since the last resort is expected to be down, it is skipped while calculating the partial connection status. Same is the case with admin down interfaces when a particular interface is configured as shutdown. For example, when LTE transport is configured as a last resort circuit, and if the Edge device has 3 tlocs in total including the one with LTE interface, then the device reports partial on 2(4) control connection status.
vsmart[*parameters*]	Connections to vSmart Controllers (On vEdge routers only). Display information about the active control plane connections between a vEdge router and vSmart controllers in the domain. *parameters* is one or more of the column headers in the **show control connections** command output.
controller-group-id *number*	Controller Group (On vEdge routers only). Display information about a specific controller group. *number* can be a value from 0 through 100.
detail	Detailed Information Display detailed information.

Command History

Release	Modification
14.1.	Command introduced.
16.2.	Controller group ID added to vEdge router output.
16.3.	Added IPv6 addresses and ports to output.
18.2.	Added Proxy column to vEdge router output.

Note The commands **show control connections** and **show control valid-vedges** are supported on vEdge platforms only and do not support on devices with ACT2/TAM modules.

Note The control connections with Cisco vManange goes down for subnet IP 172.17.0.0/16 range on transport interfaces. The IP 172.17.0.0/16 is a reserved range and cannot be used on transport interfaces.

Examples

Show control connections

```
vEdge# show control connections
                                                                                                                PEER
                                          PEER
CONTROLLER
PEER    PEER PEER            SITE       DOMAIN PEER                                                             PRIV
  PEER                                    PUB
GROUP
TYPE    PROT SYSTEM IP       ID         ID     PRIVATE IP                                                       PORT
  PUBLIC IP                               PORT  LOCAL COLOR     PROXY STATE UPTIME      ID
------------------------------------------------------------------------------------------------------------------------
vsmart  tls  172.16.255.20   200        1      10.0.12.20                                                       23556
 10.0.12.20                               23556 mpls            No    up     0:00:16:30  0

vsmart  tls  172.16.255.20   200        1      10.0.12.20                                                       23556
 10.0.37.20                               23556 lte             Yes   up     0:00:16:22  0

vsmart  tls  172.16.255.19   300        1      10.0.12.19                                                       23556
 10.0.12.19                               23556 mpls            No    up     0:00:16:30  0

vsmart  tls  172.16.255.19   300        1      10.0.12.19                                                       23556
 10.0.37.19                               23556 lte             Yes   up     0:00:16:22  0

vmanage tls  172.16.255.22   200        0      10.0.12.22                                                       23556
 10.0.37.22                               23556 lte             Yes   up     0:00:16:22  0

Manage/vSmart# show control connections

   PEER                                      PEER
      PEER    PEER PEER            SITE       DOMAIN PEER
   PRIV  PEER                                PUB
INDEX TYPE    PROT SYSTEM IP       ID         ID     PRIVATE IP
   PORT  PUBLIC IP                           PORT  REMOTE COLOR    STATE
UPTIME
------------------------------------------------------------------------------------------------------------------------
0     vedge   dtls 172.16.255.11   100        1      2001::a00:50b
   12366 2001::a00:50b                       12366 lte             up
0:00:00:03
0     vedge   dtls 172.16.255.14   400        1      2001::a01:e0e
   12366 2001::a01:e0e                       12366 lte             up
0:00:00:01
0     vedge   dtls 172.16.255.15   500        1      2001::a01:f0f
   12346 2001::a01:f0f                       12346 lte             up
0:00:00:08
```

```
0     vsmart  dtls 172.16.255.20   200        1      2001::a00:c14
   12346 2001::a00:c14                          12346 default         up
0:00:00:17
0     vbond   dtls -               0          0      2001::a00:c1a
   12346 2001::a00:c1a                          12346 default         up
0:00:00:18
1     vedge   dtls 172.16.255.21   100        1      2001::a00:515
   12366 2001::a00:515                          12366 lte             up
0:00:00:03
1     vedge   dtls 172.16.255.16   600        1      2001::a01:1010
   12386 2001::a01:1010                         12386 lte             up
0:00:00:11
1     vbond   dtls -               0          0      2001::a00:c1a
   12346 2001::a00:c1a
```

Related Topics

clear control connections, on page 28
controller-group-id
show certificate reverse-proxy, on page 210
show control connections-history, on page 230
show control local-properties, on page 233
show control summary, on page 239
show orchestrator connections, on page 368
tunnel-interface

show control connections-history

show control connections-history—Display information about control plane connection attempts initiated by the local device.

Command Syntax

show control connections-history [*index*] [**detail**]

show control connections-history *connection-parameter* [**detail**]

Syntax Description

None	List the history of connections and connection attempts by this Cisco vEdge device.
detail	Detailed Output List detailed connection history information, which includes transmit and receive statistics.
connection-parameter	Specific Connection Parameter List the connection history only for those items match the connection parameter. *connection-parameter* can be one of the following: **domain-id**,**peer-type**, **private-ip**, **private-port**, **public-ip**, **public-port**, **site-id**, and **system-ip**. These values corresponds to the column headers in the output of the show control connections-history command.

index	Specific History Item List the connection history only for the specific item in the history list.

Command History

Release	Modification
14.1.	Command introduced.

Examples

Show control connections-history

```
vSmart# show control connections-history

Legend for Errors
ACSRREJ    - Challenge rejected by peer.               NOVMCFG   - No cfg in vmanage for
device.
BDSGVERFL  - Board ID Signature Verify Failure.        NOZTPEN   - No/Bad chassis-number
entry in ZTP.
BIDNTPR    - Board ID not Initialized.                ORPTMO    - Server's peer timed out.
BIDNTVRFD  - Peer Board ID Cert not verified.         RMGSPR    - Remove Global saved peer.
CERTEXPRD  - Certificate Expired                       RXTRDWN   - Received Teardown.
CRTREJSER  - Challenge response rejected by peer.     RDSIGFBD  - Read Signature from Board
 ID failed.
CRTVERFL   - Fail to verify Peer Certificate.          SSLNFAIL  - Failure to create new
SSL context.
CTORGNMMIS - Certificate Org name mismatch.           SERNTPRES - Serial Number not present.
DCONFAIL   - DTLS connection failure.                  SYSIPCHNG - System-IP changed.
DEVALC     - Device memory Alloc failures.             TMRALC    - Memory Failure.
DHSTMO     - DTLS HandShake Timeout.                   TUNALC    - Memory Failure.
DISCVBD    - Disconnect vBond after register reply.    TXCHTOBD  - Failed to send challenge
 to BoardID.
DISTLOC    - TLOC Disabled.                            UNMSGBDRG - Unknown Message type or
 Bad Register msg.
DUPSER     - Duplicate Serial Number.                  UNAUTHEL  - Recd Hello from
Unauthenticated peer.
DUPCLHELO  - Recd a Dup Client Hello, Reset Gl Peer.   VBDEST    - vDaemon process terminated.
HAFAIL     - SSL Handshake failure.                    VECRTREV  - vEdge Certification
revoked.
IP_TOS     - Socket Options failure.                   VSCRTREV  - vSmart Certificate
revoked.
LISFD      - Listener Socket FD Error.                 VB_TMO    - Peer vBond Timed out.
MGRTBLCKD  - Migration blocked. Wait for local TMO.
MEMALCFL   - Memory Allocation Failure.                VM_TMO    - Peer vManage Timed out.
NOACTVB    - No Active vBond found to connect.         VP_TMO    - Peer vEdge Timed out.
NOERR      - No Error.                                 VS_TMO    - Peer vSmart Timed out.
NOSLPRCRT  - Unable to get peer's certificate.         XTVSTRDN  - Extra vSmart tear down.

                                                                                    PEER
                     PEER

        PEER     PEER     PEER             SITE        DOMAIN      PEER            PRIVATE
  PEER             PUBLIC                                  LOCAL      REMOTE     REPEAT

INSTANCE TYPE     PROTOCOL SYSTEM IP        ID          ID          PRIVATE IP       PORT
    PUBLIC IP        PORT    REMOTE COLOR     STATE           ERROR      ERROR      COUNT
DOWNTIME
```

```
-------------------------------------------------------------------------------------------------------------
0        vbond    dtls     -                0           0           10.1.14.14       12346
    10.1.14.14       12346   default          connect         DCONFAIL   NOERR      4
2016-02-19T10:47:13-0800
1        vbond    dtls     -                0           0           10.1.14.14       12346
    10.1.14.14       12346   default          connect         DCONFAIL   NOERR      4
2016-02-19T10:47:13-0800
```

```
vSmart# show control connections-history detail
-------------------------------------------------------------------------------------------
 REMOTE-COLOR- default SYSTEM-IP- ::   PEER-PERSONALITY- vbond
-------------------------------------------------------------------------------------------
site-id             0
domain-id           0
protocol            dtls
private-ip          10.1.14.14
private-port        12346
public-ip           10.1.14.14
public-port         12346
UUID/chassis-number db383816-8f25-41d5-822a-e7dda8c0ffd8
state               connect [Local Err: ERR_(D)TLS_CONN_FAIL] [Remote Err: NO_ERROR]
downtime            2016-02-19T10:47:13-0800
repeat count        4
previous downtime   2016-02-19T10:46:56-0800

  Tx Statistics-
  --------------
    hello                   0
    connects                0
    registers               0
    register-replies        0
    challenge               0
    challenge-response      0
    challenge-ack           0
    teardown                0
    teardown-all            0
    vmanage-to-peer         0
    register-to-vmanage     0

  Rx Statistics-
  --------------
    hello                   0
    connects                0
    registers               0
    register-replies        0
    challenge               0
    challenge-response      0
    challenge-ack           0
    teardown                0
    vmanage-to-peer         0
    register-to-vmanage     0

-------------------------------------------------------------------------------------------
 REMOTE-COLOR- default SYSTEM-IP- ::   PEER-PERSONALITY- vbond
-------------------------------------------------------------------------------------------
site-id             0
domain-id           0
protocol            dtls
private-ip          10.1.14.14
private-port        12346
public-ip           10.1.14.14
public-port         12346
UUID/chassis-number af010b09-539b-412e-bd28-d4ca2f45ea1d
state               connect [Local Err: ERR_(D)TLS_CONN_FAIL] [Remote Err: NO_ERROR]
downtime            2016-02-19T10:47:13-0800
```

```
repeat count        4
previous downtime   2016-02-19T10:46:56-0800

  Tx Statistics-
  --------------
    hello                   0
    connects                0
    registers               0
    register-replies        0
    challenge               0
    challenge-response      0
    challenge-ack           0
    teardown                0
    teardown-all            0
    vmanage-to-peer         0
    register-to-vmanage     0

  Rx Statistics-
  --------------
    hello                   0
    connects                0
    registers               0
    register-replies        0
    challenge               0
    challenge-response      0
    challenge-ack           0
    teardown                0
    vmanage-to-peer         0
    register-to-vmanage     0
```

Related Topics

clear control connections-history, on page 28
clear orchestrator connections-history, on page 48
show control connections, on page 227
show orchestrator connections-history, on page 370

show control local-properties

show control local-properties—Display the basic configuration parameters and local properties related to the control plane (on vEdge routers, vManage NMSs, and vSmart controllers only).

Command Syntax

show control local-properties [*parameter*]

Syntax Description

None	Display the basic configuration parameters and local properties related to the control plane.

parameter	Information about a Specific Parameter Display configuration information about a specific parameter. *parameter* can be one of the following: **board-serial**, **certificate-not-valid-after**, **certificate-not-valid-before**, **certificate-status**, **certificate-validity**, **device-type**, **dns-cache-flush-interval**, **dns-name**, **domain-id**, **ip-address-list**, **keygen-interva**l, **max-controllers**, **no-activity**, **number-active-wan-interfaces**, **number-vbond-peers**, **organization-name**, **port-hopped**, **protocol**, **register-interval**, **retry-interval**, **root-ca-chain-status**, **root-ca-crl-status site-id**, **system-ip**, **time-since-port-hop**, **tls-port**, **uuid**, **vbond-address-list**, **vedge-list-version**, **vsmart-list-version**, and **wan-interface-list**.

Command History

Release	Modification
14.1.	Command introduced.
16.1.	Added instance field to output for vSmart controllers and vManage NMSs.
16.2.	Added SPI Time Remaining and Last-Resort Interface fields to output for vEdge routers.
16.3.	Added display information about IPv6 WAN interfaces, NAT type, low-bandwidth interface, and vManage connection preference.
17.7	Added **root-ca-crl-status** parameter.
Cisco SD-WAN Release 20.7.1	Added the Hierarchical SD-WAN region assignment to the **REGION IDs** column.
Cisco SD-WAN Release 20.8.1	For Hierarchical SD-WAN architectures, the **REGION IDs** column shows the secondary region also.

Examples

Show control local-properties

```
vEdge# show control local-properties
personality                   vedge
organization-name             Cisco, Inc.
certificate-status            Installed
root-ca-chain-status          Installed
root-ca-crl-status            Installed

certificate-validity          Valid
certificate-not-valid-before  Dec 15 18:06:59 2016 GMT
certificate-not-valid-after   Dec 15 18:06:59 2017 GMT

dns-name                      10.0.12.26
site-id                       100
domain-id                     1
protocol                      dtls
tls-port                      0
system-ip                     172.16.255.11
chassis-num/unique-id         b5887dd3-3d70-4987-a3a4-6e06c1d64a8c
```

```
serial-num                    12345714
vsmart-list-version           0
keygen-interval               1:00:00:00
retry-interval                0:00:00:19
no-activity-exp-interval      0:00:00:12
dns-cache-ttl                 0:00:02:00
port-hopped                   TRUE
time-since-last-port-hop      0:00:43:16
number-vbond-peers            0
number-active-wan-interfaces 1

NAT TYPE: E -- indicates End-point independent mapping
          A -- indicates Address-port dependent mapping
          N -- indicates Not learned
          Note: Requires minimum two vbonds to learn the NAT type


   VM
           PUBLIC           PUBLIC PRIVATE         PRIVATE
PRIVATE                              MAX     CONTROL/            LAST         SPI TIME   NAT
  CON
INTERFACE  IPv4             PORT   IPv4            IPv6
PORT    VS/VM COLOR            STATE CNTRL   STUN         LR/LB  CONNECTION   REMAINING
TYPE PRF
--------------------------------------------------------------------------------------------------------------------
ge0/0      10.1.15.15       12426  10.1.15.15      ::
12426    0/0  lte               up    2      no/yes/no   No/No  0:00:00:16   0:11:26:41  E
   5
ge0/3      10.0.20.15       12406  10.0.20.15      ::
12406    0/0  3g                up    2      no/yes/no   No/No  0:00:00:13   0:11:26:45  N
   5

vEdge# show control local-properties wan-interface-list

                                            RESTRICT/
           PUBLIC           PUBLIC PRIVATE         PRIVATE
PRIVATE                              MAX    CONTROL/            LAST         SPI TIME
INTERFACE  IPv4             PORT   IPv4            IPv6
PORT    VS/VM COLOR            STATE CNTL   STUN        LR/LB  CONNECTION   REMAINING
                                                              STUN
--------------------------------------------------------------------------------------------------------------------
ge0/2      10.0.5.11        12366  10.0.5.11       ::
12366    2/0  lte               up    2      no/yes/no   No/No  0:00:16:22   0:11:42:46

vEdge# show control local-properties wan-interface-list | display xml
<config xmlns="http://tail-f.com/ns/config/1.0">
  <control xmlns="http://viptela.com/security">
  <local-properties>
  <wan-interface-list>
    <instance>0</instance>
    <index>0</index>
    <interface>ge0/2</interface>
    <public-ip>10.0.5.11</public-ip>
    <public-port>12366</public-port>
    <private-ip>10.0.5.11</private-ip>
    <private-port>12366</private-port>
    <num-vsmarts>2</num-vsmarts>
    <num-vmanages>0</num-vmanages>
    <weight>1</weight>
    <color>lte</color>
    <carrier>default</carrier>
    <preference>0</preference>
    <admin-state>up</admin-state>
    <operation-state>up</operation-state>
    <last-conn-time>0:00:16:27</last-conn-time>
```

```
    <restrict-str>no</restrict-str>
    <control-str>yes</control-str>
    <per-wan-max-controllers>2</per-wan-max-controllers>
    <private-ipv6>::</private-ipv6>
    <spi-change>0:11:42:41</spi-change>
    <last-resort>No</last-resort>
    <wan-port-hopped>TRUE</wan-port-hopped>
    <wan-time-since-port-hop>0:00:19:11</wan-time-since-port-hop>
    <vbond-as-stun-server>no</vbond-as-stun-server>
    <vmanage-connection-preference>5</vmanage-connection-preference>
    <low-bandwidth-link>No</low-bandwidth-link>
  </wan-interface-list>
  </local-properties>
  </control>
</config>
```

```
vSmart# show control local-properties
personality                   vsmart
organization-name             Cisco, Inc.
certificate-status            Installed
root-ca-chain-status          Installed
root-ca-crl-status            Installed

certificate-validity          Valid
certificate-not-valid-before Dec 15 18:07:15 2016 GMT
certificate-not-valid-after  Dec 15 18:07:15 2017 GMT

dns-name                      10.0.12.26
site-id                       100
domain-id                     1
protocol                      dtls
tls-port                      23456
system-ip                     172.16.255.19
chassis-num/unique-id         4fc2a9b0-1dc3-4a1e-b1a4-9c565e6ab12b
serial-num                    12345707
vedge-list-version            0
vsmart-list-version           0
retry-interval                0:00:00:18
no-activity-exp-interval      0:00:00:12
dns-cache-ttl                 0:00:02:00
port-hopped                   FALSE
time-since-last-port-hop      0:00:00:00
number-vbond-peers            1

INDEX   IP                                        PORT
-----------------------------------------------------
0       10.0.12.26                                12346

number-active-wan-interfaces 2

                     PUBLIC          PUBLIC PRIVATE         PRIVATE
         PRIVATE                                  LAST
INSTANCE INTERFACE  IPv4            PORT   IPv4            IPv6
         PORT    VS/VM  COLOR            STATE CONNECTION
-------------------------------------------------------------------------------------------------
0        eth1       10.0.5.19       12346  10.0.5.19       ::
         12346     1/0   default          up    0:00:00:17
1        eth1       10.0.5.19       12446  10.0.5.19       ::
         12446     0/0   default          up    0:00:00:17
```

```
vManage# show control local-properties
personality                   vmanage
organization-name             Cisco, Inc.
certificate-status            Installed
root-ca-chain-status          Installed
```

```
root-ca-crl-status.          Installed

certificate-validity         Valid
certificate-not-valid-before Mar 01 00:07:31 2016 GMT
certificate-not-valid-after  Mar 01 00:07:31 2017 GMT

dns-name                     10.1.14.14
site-id                      200
domain-id                    0
protocol                     dtls
tls-port                     23456
system-ip                    172.16.101.20
chassis-num/unique-id        9f9e3ca9-b909-43c5-be0e-acb819a45dc0
serial-num                   1234560A
vedge-list-version           1
vsmart-list-version          0
retry-interval               0:00:00:19
no-activity-exp-interval     0:00:00:12
dns-cache-ttl                0:00:02:00
port-hopped                  FALSE
time-since-last-port-hop     0:00:00:00
number-vbond-peers           1

INDEX   IP                  PORT
-------------------------------
0       10.1.14.14          12346

number-active-wan-interfaces 2

                     PUBLIC            PUBLIC  PRIVATE          PRIVATE
                                     LAST
INSTANCE INTERFACE   IP                PORT    IP               PORT     VS/VM  COLOR
     CARRIER              STATE    CONNECTION
-------------------------------------------------------------------------------------
0         eth1       10.0.12.22        12346   10.0.12.22       12346    2/0    default
     default              up       0:00:00:07
1         eth1       10.0.12.22        12446   10.0.12.22       12446    0/0    default
     default              up       0:00:00:08
```

Related Topics

show control connections, on page 227
show orchestrator local-properties, on page 373
show system status, on page 459
tunnel-interface

show control statistics

show control statistics—Display statistics about the packets that a vEdge router or vSmart controller has transmitted and received in the process of establishing and maintaining secure DTLS connections to Cisco vEdge devices in the overlay network (on vEdge routers and vSmart controllers only).

Command Syntax

show control statistics [*counter-name*]

Syntax Description

None	Display statistics about all packets sent and received by the vEdge router or vSmart controller as it establishes and maintains DTLS tunnel connections to the Cisco vEdge devices in the overlay network.
counter-name	Statistics about a Specific Counter Display the statistics for the specific counter. For a list of counters, see the Example Output below.

Command History

Release	Modification
14.1.	Command introduced.

Examples

Show control statistic

```
vSmart# show control statistics
Tx Statistics:
--------------
packets                    51181
octets                     3836240
error                      0
blocked                    0
hello                      50894
connects                   0
registers                  283
register-replies           0

dtls-handshake             3
dtls-handshake-failures    0
dtls-handshake-done        3

challenge                  4
challenge-response         3
challenge-ack              4
challenge-errors           0
challenge-response-errors  0
challenge-ack-errors       0
challenge-general-errors   0
vmanage-to-peer            0
register_to_vmanage        1

Rx Statistics:
--------------
packets                    56725
octets                     4170626
errors                     0
hello                      50897
connects                   855
registers                  0
register-replies           283

dtls-handshake             15
```

```
dtls-handshake-failures    0
dtls-handshake-done        4

challenge                  3
challenge-response         4
challenge-ack              3
challenge-failures         0
vmanage-to-peer            1
register_to_vmanage        0
```

Related Topics

show control connections, on page 227
show control summary, on page 239
show orchestrator statistics, on page 375

show control summary

show control summary—List a count of Cisco vEdge devices that the local device is aware of. For devices running on virtual machines (VMs) that have more than one core, this command shows the number of devices that each vdaemon process instance is handling.

Command Syntax

show control summary [*instance*]

Syntax Description

None	Display a count of all the vBond orchestrators, vEdge routers, vManage NMSs, and vSmart controllers in the overlay network.
instance	Devices for a Specific vdaemon Process Display a count of devices for a specific instance of a vdaemon process. Cisco vEdge devices that run on VMs that have more than one core automatically spawn one vdaemon process for each core, to load-balance the Cisco SD-WAN software functions across all the CPUs in the VM server.

Command History

Release	Modification
14.1.	Command introduced.
15.3.3.	Added support for multiple vdaemon processes (for vManage NMS only).
15.4.	Added support for multiple vdaemon processes for all devices running as VMs.
16.3.	Added display of IPv6 addresses and ports.

Examples

Show control summary

```
vEdge# show control summary

          VBOND   VMANAGE  VSMART  VEDGE             LISTENING   LISTENING  LISTENING
INSTANCE  COUNTS  COUNTS   COUNTS  COUNTS  PROTOCOL  IP          IPV6       PORT
-------------------------------------------------------------------------------------
0         1       0        2       3       dtls      10.0.12.22  -          12346
1         1       0        0       2       dtls      10.0.12.22  -          12446
```

Related Topics

show control connections, on page 227
show orchestrator summary, on page 377

show control valid-vedges

show control valid-vedges—List the chassis numbers of the valid vEdge routers in the overlay network (on vSmart controllers only).

Command Syntax

show control valid-vedges

Syntax Description

None

Command History

Release	Modification
14.1.	Command introduced.
14.2	Command renamed from **show control valid-devices**

Examples

Show control valid-vedges

```
vSmart# show control valid-vedges

                SERIAL
CHASSIS NUMBER  NUMBER    VALIDITY
----------------------------------
11OD113140004   10000266  valid
11OD145130082   10000142  staging
11OD252130046   100001FF  valid
11OD252130049   1000020B  valid
11OD252130057   1000020C  staging
R26OC126140004  10000369  valid
```

Related Topics

show control connections, on page 227
show control valid-vsmarts, on page 241
show orchestrator valid-vedges, on page 378

show control valid-vsmarts

List the serial numbers of the valid vSmart controllers in the overlay network (on vEdge routers and vSmart controllers only).

show control valid-vsmarts [*serial-number*]

Syntax Description

None	Display the serial numbers of all valid vSmart controllers in the overlay network.
Serial Number	*serial-number* List whether a specific vSmart serial number is valid**.**

Command History

Release	Modification
14.1.	Command introduced.

Examples

Show control valid-vsmarts

```
vEdge# show control valid-vsmarts
SERIAL NUMBER     ORG
-------------------------------------
9AG05FECDEC9A35F  Cisco Systems
9AG05FECDEC9A362  Cisco Systems
```

Related Topics

show control connections, on page 227
show control valid-vedges, on page 240
show orchestrator valid-vsmarts, on page 379

show crash

Display a list of the core files on the local device. Core files are saved in the /var/crash directory on the local device. They are readable by the "admin" user.

show crash [*index-number*] [**core-filename** *filename*]

Syntax Description

None	List all core files on the local device.
Core Filename	**core-filename** *filename* List a specific core filename.
File Index Number	*index-number* List a specific file by file index number.

Command History

Release	Modification
14.1.	Command introduced.

Examples

Show crash

```
vSmart# show crash

INDEX  CORE TIME                 CORE FILENAME
-------------------------------------------------------------------
0      Tue Sep  2 17:13:43 2014  core.ompd.866.vsmart.1409703222
```

Related Topics

clear crash, on page 30
file list, on page 79
file show, on page 80
logging disk
show logging, on page 329

show crypto pki trustpoints status

To display the trustpoint information, use the **show crypto pki trustpoints status** command.

show crypto pki trustpoints *label* **status**

Syntax Description

label	A user-specified label that is referenced within the **crypto pki trustpoint** command.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1r	This command was introduced.
Cisco SD-WAN Release 20.1.1	This command was introduced.

Example

This example shows how to display the trustpoint information:

```
Router# show crypto pki trustpoints  Root CAstatus

crypto pki trustpoints Root-CA status
Trustpoint Root-CA:
  Issuing CA certificate configured:
    Subject Name:
     cn=ca
    Fingerprint MD5: 653100C5 90CF8698 0BA8E443 BC85D616
    Fingerprint SHA1: DCEC0FCD 12C319C1 61191263 E52007FB 2E8D353A
  Last enrollment status: Granted
  State:
    Keys generated ..... Yes
    Issuing CA authenticated ..... Yes
    Certificate request(s) ..... Yes
```

show devices

Display information about the Cisco vEdge devices that a vManage NMS is managing (on vManage NMSs only).

show devices [**device** *device-name*] [**commit-queue**] [**state** *state*]

Syntax Description

None	List information about all devices that the vManage NMS is managing.
Queue Length	**commit-queue** List information about the queue length.
Specific Device	**device** *device-name* List information about a specific device that the vManage NMS is managing.
Specific State	**state** *state* List information about a specific state. *state* can be **admin-state**, **last-transaction-id**, **oper-state**, and **oper-state-error-tag**. These states correspond to the column headings in the output of the **show devices** command.

Command History

Release	Modification
14.2.	Command introduced.

Examples

Display information about all the Cisco vEdge devices that a vManage NMS is managing:

Show devices

```
vManage# show devices
                                                OPER
                                                STATE   LAST
                        QUEUE   WAITING  OPER    ERROR   TRANSACTION
NAME                    LENGTH  FOR      STATE   TAG     ID
-----------------------------------------------------------------------
myvedge                 0       [  ]     disabled  -      -
vedge-172.16.255.11     0       [  ]     enabled   -      -
vedge-172.16.255.14     0       [  ]     disabled  -      -
vedge-172.16.255.15     0       [  ]     enabled   -      -
vedge-172.16.255.16     0       [  ]     enabled   -      -
vedge-172.16.255.21     0       [  ]     enabled   -      -
vsmart-172.16.255.19    0       [  ]     enabled   -      -
vsmart-172.16.255.20    0       [  ]     enabled   -      -
```

show dhcp interface

Display information about interfaces that are DHCPv4 clients (on vEdge routers and vSmart controllers only).

show dhcp interface [**vpn** *vpn-id*] [*interface-name*]**show dhcp interface** [**dns-list**] [**state**]

Syntax Description

None	Display information about all interfaces that are DHCPv4 clients.
DNS Servers	**dns-list** Display the DHCPv4 client DNS information.
Lease State	**state** Display the DHCPv4 client interface state information.
VPN	**vpn** *vpn-id* Display DHCPv4 client interface information for a specific VPN.

Command History

Release	Modification
14.3.	Command introduced.

Examples

Show dhcp interface

```
vEdge# show dhcp interface
                                                                                    TIME

VPN   INTERFACE   STATE   ACQUIRED IP          SERVER          LEASE TIME    REMAINING     GATEWAY
         INDEX   DNS
-------------------------------------------------------------------------------------------------------
0     ge0/4       bound   192.168.178.131/24   192.168.178.1   13:00:00:00   11:15:32:11
192.168.178.1   0       192.168.178.1
```

Related Topics

clear dhcp server-bindings, on page 30
dhcp-helper
dhcp-server
show dhcp server, on page 245
show ipv6 dhcp interface, on page 315

show dhcp server

Display information about the DHCP server functionality that is enabled on the router (on vEdge routers only).

show dhcp server [**bindings** *mac-address*] [*dhcp-property*]**show dhcp server** [**vpn** *vpn-id*] [**bindings** *mac-address*] [*dhcp-property*]

Syntax Description

None	Display information about all DHCP server functionality enabled on the router.
Client Binding	**bindings** *mac-address* Display the DHCP binding information for the client with the specified MAC address.
DHCP Property	*dhcp-property* Display information about a specific DHCP property. *dhcp-property* can be one of **client-ip** *ip-address*, **host-name** *hostname*, **lease-time**, **least-time-remaining**, and **static-binding** (**false** | **true**).
VPN	**vpn** *vpn-id* Display DHCP server information for a specific VPN.

Command History

Examples

Release	Modification
14.3.	Command introduced.

Show dhcp server

```
vEdge# show dhcp server
                                                                    LEASE TIME  STATIC
VPN  IFNAME  CLIENT MAC         CLIENT IP       LEASE TIME  REMAINING   BINDING  HOST NAME
-------------------------------------------------------------------------------------------
1    ge1/2   00:00:00:79:64:01  192.168.15.101  1:00:00:00  0:13:37:25  false    --
             00:00:00:79:64:02  192.168.15.102  1:00:00:00  0:13:37:20  false    --
             00:0c:29:21:30:d0  192.168.15.103  1:00:00:00  0:16:38:53  false    --
...
```

Related Topics

clear dhcp server-bindings, on page 30
clear dhcp state, on page 31
dhcp-server
show dhcp interface, on page 244

show dot1x clients

Display information about the 802.1X clients in the network (on vEdge routers only).

Command Hierarchy

```
show dot1x clients [detail]
show dot1x clients eapol [detail]
show dot1x clients interface interface-name [macaddress mac-address]
```

Syntax Description

None	Display standard information about the 802.1X clients in the network.
Detailed Client Information	**detail** Display detailed information about the 802.1X clients.
EAPOL State	**eapol** Display the Extensible Authentication Protocol over LAN (EAPOL) status for each 802.1X client.
Specific Interface and MAC Address	**interface** *interface-name* [**macaddress** *mac-address*] Display the 802.1X clients on a specific interface, or display a specific client on a specific interface.

Command History

Release	Modification
16.3.	Command introduced.

Examples

Display information about the 802.1X clients on an 802.1X–enabled interface:

Show dot1x clients

```
vEdge# show dot1x clients
                                                    AUTH                EAP                SESSION
  CONNECTED  INACTIVE  SESSION
INTERFACE  MAC ADDRESS        AUTH STATE       METHOD  VLAN  VPN  METHOD  USERNAME  TIME
  TIME       TIME      ID
------------------------------------------------------------------------------------------------
ge0/1      00:50:b6:0f:1c:84  Authenticating  Radius  12    -    (PEAP)  -         -
  -          1         -

vEdge# show dot1x clients
                                                AUTH                EAP                SESSION
 CONNECTED  INACTIVE
INTERFACE  MAC ADDRESS        AUTH STATE      METHOD  VLAN  VPN  METHOD  USERNAME  TIME
 TIME       TIME      SESSION ID
------------------------------------------------------------------------------------------------
ge0/1      00:50:b6:0f:1c:84  Authenticated   Radius  12    -    (PEAP)  ravi      9
 9          0         57E1B641-00000001
```

Related Topics

clear dot1x client, on page 33
dot1x
show dot1x interfaces, on page 247
show dot1x radius, on page 248
show system statistics, on page 454

show dot1x interfaces

Display information about 802.1X–enabled interfaces (on vEdge routers only).

show dot1x interfaces

Syntax Description

Syntax Description

None

Command History

Release	Modification
16.3.	Command introduced.

Examples

Display information about the 802.1X on an 802.1Z–enabled interface:

Show dot1x interfaces

```
vEdge# show dot1x interfaces
      802.1X Interface Information:

      Interface ge0/1:
        Operational state           : Up
        Host mode                   : Multi Auth
        MAB server                  : true
        MAB local                   : true
        Wake On LAN                 : true
        Reauthentication period     : 600 seconds
        Inactivity timeout          : 3600 seconds
        Guest VLAN                  : 11
        Auth fail VLAN              : 12
        Auth reject VLAN            : 13
        Default VLAN                :
        Primary radius server       : 192.168.48.12
        Secondary radius server     : 192.168.48.11
        Interim accounting interval : disabled
        Number of connected clients : 1

      802.1X Interface Information:

      Interface ge0/2:
        Operational state           : Down
        Host mode                   : Single Host
        MAB server                  : false
        MAB local                   : false
        Wake On LAN                 : false
        Reauthentication period     : disabled
        Inactivity timeout          : disabled
        Guest VLAN                  : none
        Auth fail VLAN              : none
        Auth reject VLAN            : none
        Default VLAN                :
        Primary radius server       : 192.168.48.11
        Secondary radius server     : none
        Interim accounting interval : disabled
        Number of connected clients : 0
```

Related Topics

clear dot1x client, on page 33
dot1x
show dot1x clients, on page 246
show dot1x radius, on page 248
show system statistics, on page 454

show dot1x radius

Display statistics about the sessions with RADIUS servers being used for IEEE 802.1X and 802.11i authentication (on vEdge routers only).

Command Hierarchy

```
show dot1x radius
```

Syntax Description

None

Command History

Release	Modification
16.3.	Command introduced.

Examples

Display information about the RADIUS servers that are being used for IEEE 802.1X WAN and 802.11i WLAN authentication:

Show dot1x radius

```
vEdge# show dot1x radius
RADIUS server information for 802.1X interface ge0/1:
    Server IP address              : 192.168.48.11
    Server VPN                     : 512
    Server priority                : secondary
    Authentication statistics:
        Port number                : 1812
        Server is current          : true
        Round trip time            : 0
        Access requests            : 10
        Access retransmissions     : 0
        Access accepts             : 1
        Access rejects             : 0
        Access challenges          : 9
        Malformed access responses : 0
        Bad authenticators         : 0
        Pending requests           : 0
        Timeouts                   : 0
        Unknown types              : 0
        Packets dropped            : 0
    Accounting statistics:
        Port number                : 1813
        Server is current          : true
        Round trip time            : 0
        Requests                   : 5
        Retransmissions            : 0
        Responses                  : 2
        Malformed responses        : 0
        Bad authenticators         : 0
        Pending requests           : 0
        Timeouts                   : 3
        Unknown types              : 0
        Packets dropped            : 0

RADIUS server information for 802.1X interface ge0/1:
    Server IP address              : 192.168.48.12
    Server VPN                     : 512
    Server priority                : primary
    Authentication statistics:
```

```
        Port number                : 1812
        Server is current          : false
        Round trip time            : 0
        Access requests            : 1
        Access retransmissions     : 1
        Access accepts             : 0
        Access rejects             : 0
        Access challenges          : 0
        Malformed access responses : 0
        Bad authenticators         : 0
        Pending requests           : 0
        Timeouts                   : 2
        Unknown types              : 0
        Packets dropped            : 0
    Accounting statistics:
        Port number                : 1813
        Server is current          : false
        Round trip time            : 0
        Requests                   : 4
        Retransmissions            : 2
        Responses                  : 0
        Malformed responses        : 0
        Bad authenticators         : 0
        Pending requests           : 0
        Timeouts                   : 6
        Unknown types              : 0
        Packets dropped            : 0
```

Related Topics

clear dot1x client, on page 33
show dot1x interfaces, on page 247
radius
show dot1x clients, on page 246
show system statistics, on page 454

show hardware alarms

Display information about currently active hardware alarms (on vEdge routers only).

show hardware alarms [*alarm-number*]

Syntax Description

None	Display all currently active hardware alarms.
Specific Alarm	*alarm-number* Display information about a specific hardware alarm.

Command History

Release	Modification
14.1.	Command introduced.

Examples

Show hardware alarms

```
vEdge# show hardware alarms
ALARM  ALARM                                                    ALARM

ID     INSTANCE  ALARM NAME         ALARM TIME                  CATEGORY  ALARM DESCRIPTION

-------------------------------------------------------------------------------------------------------------
5      0         Power Supply Down  Thu Nov 07 14:19:21 PST 2  Minor     Power supply '0'
down or not present
5      1         Power Supply Down  Thu Nov 07 14:19:21 PST 2  Minor     Power supply '1'
down or not present
```

Related Topics

show hardware environment, on page 251
show hardware inventory, on page 254
show hardware real time information, on page 257
show hardware temperature-thresholds, on page 258
show interface sfp detail, on page 283
show interface sfp diagnostic, on page 287

show hardware environment

Display status information about the router components, including component temperature (on vEdge routers only).

show hardware environment [**Fans** [*fan-name*]] [**PEM** [*pem-name*]] [**PIM** [*pim-name*] [**Temperature** [*component-name*]] [**USB**]**show hardware environment** (**measurement** | **status**)

Syntax Description

None	None: Display status information about all router components.
measurement	Component Measurement: List the components and the information in the Measurement column, such as a component's temperature.
status	Component Status: List the components and the information in the Status column.
Temperature [*component-name*]	Component Temperature: Display the temperature of all router components or of a specific component.

Fans [*fan-name*]	Fan Information: Display information about all the fans or about a specific fan. Note that the Cisco SD-WAN software maintains the fans at an optimal fan speed, raising the speed as the ambient temperature increases and decreasing the speed as the temperature decreases, to keep the vEdge router operating at the lowest possible temperature in the green temperature threshold.
PEM [*pem-name*]	PEM Information: Display information about all the power supply modules or about a specific power supply.
PIM [*pim-name*]	PIM Information: Display information about all the Pluggable Interface Modules (PIMs) or about a specific PIM.
USB	USB Information: **USB** Display information about USB controllers.

Command History

Release	Modification
14.1	Command introduced.
17.1	Display status of router LEDs in the command output.

Output Fields

LEDs

In Releases 17.1 and later, the command output shows the status of the hardware router LEDs, as follows:

- vEdge 100b—System LED
- vEdge 100m—System and WWAN LEDs
- vEdge 100wm—System, WLAN, and WWAN LEDs
- vEdge 1000—Status and System LEDs
- vEdge 2000—PIM Status, Status, and System LEDs

Example

```
vEdge# show hardware environment

                                        HW
                                        DEV
HW CLASS             HW ITEM            INDEX  STATUS  MEASUREMENT

-------------------------------------------------------------------------------------------
Temperature Sensors  PIM                 0      OK      35 degrees C/95 degrees F
```

```
Temperature Sensors  DRAM                    0      OK      27 degrees C/81 degrees F

Temperature Sensors  DRAM                    1      OK      29 degrees C/84 degrees F

Temperature Sensors  Board                   0      OK      29 degrees C/84 degrees F

Temperature Sensors  Board                   1      OK      33 degrees C/92 degrees F

Temperature Sensors  Board                   2      OK      34 degrees C/93 degrees F

Temperature Sensors  Board                   3      OK      33 degrees C/91 degrees F

Temperature Sensors  CPU junction            0      OK      41 degrees C/106 degrees F

Fans                 Tray 0 fan              0      OK      Spinning at 6300 RPM

Fans                 Tray 0 fan              1      OK      Spinning at 4080 RPM

Fans                 Tray 1 fan              0      OK      Spinning at 6300 RPM

Fans                 Tray 1 fan              1      OK      Spinning at 4080 RPM

Fans                 Tray 2 fan              0      OK      Spinning at 5940 RPM

Fans                 Tray 2 fan              1      OK      Spinning at 4020 RPM

Fans                 Tray 3 fan              0      OK      Spinning at 6180 RPM

Fans                 Tray 3 fan              1      OK      Spinning at 3960 RPM

PEM                  Power supply            0      Down    Present: yes; Powered On: no; Fault: no

PEM                  Power supply            1      OK      Present: yes; Powered On: yes; Fault: no

PIM                  Interface module        0      OK      Present: yes; Powered On: yes; Fault: no

PIM                  Interface module        1      OK      Present: yes; Powered On: yes; Fault: no

PIM                  Interface module        2      OK      Present: yes; Powered On: yes; Fault: no
USB                  External USB Controller 0      Down    In reset
```

```
vEdge1000# show hardware environment
                                         HW
                                         DEV
HW CLASS             HW ITEM             INDEX  STATUS  MEASUREMENT
-------------------------------------------------------------------------------------------------
Temperature Sensors  DRAM                0      OK      40 degrees C/105 degrees F
Temperature Sensors  Board               0      OK      37 degrees C/98 degrees F
Temperature Sensors  Board               1      OK      38 degrees C/101 degrees F
Temperature Sensors  Board               2      OK      36 degrees C/96 degrees F
Temperature Sensors  Board               3      OK      36 degrees C/96 degrees F
Temperature Sensors  CPU junction        0      OK      49 degrees C/120 degrees F
Fans                 Tray 0 fan          0      OK      Spinning at 4560 RPM
Fans                 Tray 0 fan          1      OK      Spinning at 4740 RPM
PEM                  Power supply        0      OK      Powered On: yes; Fault: no
PEM                  Power supply        1      Down    Powered On: no; Fault: no
PIM                  Interface module    0      OK      Present: yes; Powered On: yes; Fault: no
USB                  External USB controller  0      Down    In reset
LED                  Status LED          0      OK      Off
LED                  System LED          0      OK      Red
```

```
vEdge100/1000# show hardware environment pem
                    HW
HW                  DEV
CLASS  HW ITEM      INDEX  STATUS  MEASUREMENT
-------------------------------------------------------------
PEM    Power supply 0      OK      Powered On: yes; Fault: no
PEM    Power supply 1      Down    Powered On: no; Fault: no
```

```
vEdge# show hardware measurement
                                         HW
                                         DEV
```

```
HW CLASS             HW ITEM                  INDEX  MEASUREMENT
-------------------------------------------------------------------------------------------
Temperature Sensors  DRAM                     0      0 degrees C/32 degrees F
Temperature Sensors  Board                    0      0 degrees C/32 degrees F
Temperature Sensors  Board                    1      0 degrees C/32 degrees F
Temperature Sensors  Board                    2      0 degrees C/32 degrees F
Temperature Sensors  Board                    3      0 degrees C/32 degrees F
Temperature Sensors  CPU junction             0      0 degrees C/32 degrees F
PEM                  Power supply             0      Present: no; Powered On: no; Fault: no
PEM                  Power supply             1      Present: no; Powered On: no; Fault: no
PIM                  Interface module         0      Present: yes; Powered On: no; Fault: no
USB                  External USB controller  0      2 USB Ports
```

Operational Commands

show hardware alarms

show hardware inventory

show hardware real-time-information

show hardware temperature-thresholds

Related Topics

show hardware alarms, on page 250
show hardware inventory, on page 254
show hardware real time information, on page 257
show hardware temperature-thresholds, on page 258

show hardware inventory

Display an inventory of the hardware components in the router, including serial numbers (on vEdge routers only).

show hardware inventory [*component-name*]

Syntax Description

	None: Display the inventory of all router components.
component-name	Specific Component: Display inventory information about a specific component. *component-name* can be one of **cpu**, **chassis**, **dram**, **eemc**, **fan-tray**, **flash**, **pim**, and **transceiver**.

Command History

Release	Modification
14.1	Command introduced.

Output Fields

For vEdge routers that support WLAN interfaces, the Description column for the Chassis includes the country code (shows as CC:).

Example

```
vEdge-1000# show hardware inventory
            HW
            DEV
HW TYPE     INDEX  VERSION  PART NUMBER       SERIAL NUMBER     DESCRIPTION
-------------------------------------------------------------------------------------------------------------------------------
Chassis     0      3.1      vEdge-1000        11OD145130039     vEdge-1000
CPU         0      None     None              None              Quad-Core Octeon-II
DRAM        0      None     None              None              2048 MB DDR3
Flash       0      None     None              None              Flash: Type - nor, Size - 16.00 MB
eMMC        0      None     None              None              eMMC: Size - 7.31 GB
USB         0      None     None              20046000CBF20D899 USB 0: Manufacturer - SanDisk, Product - Cruzer, Size - 3.74
 GB
PIM         0      None     ge-fixed-8        None              8x 1GE Fixed Module
Transceiver 0      A        FCLF-8521-3       PQM2QLL           Port 0/0, Type 0x8 (Copper), Vendor - FINISAR CORP.
Transceiver 1      A        FCLF-8521-3       PQP6KRT           Port 0/1, Type 0x8 (Copper), Vendor - FINISAR CORP.
Transceiver 7      PB       1GBT-SFP05        PQE5T0T           Port 0/7, Type 0x8 (Copper), Vendor - BEL-FUSE
FanTray     0      None     None              None              Fixed Fan Tray - 2 Fan
vEdge-100# show hardware inventory
         HW
         DEV
HW TYPE  INDEX  VERSION  PART NUMBER   SERIAL NUMBER   HW DESCRIPTION
-----------------------------------------------------------------------------------------
Chassis  0      4.1      vEdge-100M    1780D133150002  vEdge-100. CPLD rev: 0x8, PCB rev: D.
CPU      0      None     None          None            Dual-Core Octeon-III
DRAM     0      None     None          None            2048 MB DDR3
PIM      0      None     ge-fixed-5    None            5x 1GE Fixed Module
PIM      1      None     Wireless LAN  None            Wireless LAN Module
PIM      2      None     Wireless WAN  None            Wireless WAN Module
FanTray  0      None     None          None            Fixed Fan Tray - 1 Fan
vEdge-100# show hardware inventory Transceiver
hardware inventory Transceiver 1
version          "    "
part-number      "AFBR-5710PZ "
serial-number    "AM12482AZ3K "
hw-description   "Port 0/1, Type 0x01 (1G Fiber SX), Date: 2012/11/29, Vendor: AVAGO "
hardware inventory Transceiver 5
version          "    "
part-number      "AFBR-5710PZ "
serial-number    "AM13412D2Z7 "
hw-description   "Port 0/5, Type 0x01 (1G Fiber SX), Date: 2013/10/11, Vendor: AVAGO
vEdge-100wm# show hardware inventory

         HW
         DEV
HW TYPE  INDEX  VERSION  PART NUMBER   SERIAL NUMBER    HW DESCRIPTION
-------------------------------------------------------------------------------------------------------------------------------
Chassis  0      6.2      81001730400   1780F2215160008  vEdge-100wm-GB. CPLD rev: 0x2, PCB rev: F, CC: US. Mfg Date: 19/05/2016
CPU      0      None     None          None             Dual-Core Octeon-III
DRAM     0      None     None          None             2048 MB DDR3
PIM      0      None     ge-fixed-5    None             5x 1GE Fixed Module
PIM      1      None     Wireless LAN  None             Wireless LAN Module
PIM      2      None     Wireless WAN  None             Wireless WAN Module
FanTray  0      None     None          None             Fixed Fan Tray - 1 Fan
vEdge-Cloud# show hardware inventory

         HW
         DEV                          SERIAL
HW TYPE  INDEX  VERSION  PART NUMBER  NUMBER  HW DESCRIPTION
-------------------------------------------------------------------
Chassis  0      1.0      vEdge-Cloud  sim     vEdge-Cloud
PIM      0      None     ge-8         None    Max 8 x 1GE VM ports

vEdge-Cloud# show hardware alarms
# No entries found.
```

```
vEdge-Cloud# show hardware temperature-thresholds
% No entries found.
```

Operational Commands

show hardware alarms

show hardware environment

show hardware temperature-thresholds

show interface sfp detail

show interface sfp diagnostic

Related Topics

show hardware alarms, on page 250
show hardware environment, on page 251
show hardware temperature-thresholds, on page 258
show interface sfp detail, on page 283
show interface sfp diagnostic, on page 287

show hardware poe

show hardware poe—Display the status of PoE interfaces (on vEdge 100 series routers only).

show hardware poe

Syntax Description

None

None	Display status information about all router components.
Component Measurement	**measurement** List the components and the information in the Measurement column, such as a component's temperature.
Component Status	**status** List the components and the information in the Status column.

Component Temperature	**Temperature** [*component-name*] Display the temperature of all router components or of a specific component.

Fan Information	**Fans** [*fan-name*] Display information about all the fans or about a specific fan. Note that the Cisco SD-WAN software maintains the fans at an optimal fan speed, raising the speed as the ambient temperature increases and decreasing the speed as the temperature decreases, to keep the vEdge router operating at the lowest possible temperature in the green temperature threshold.

Examples

```
vEdge# show hardware poe                              POE       MAXIMUM  USED   DEVICE INTERFACE
    ADMIN STATUS  STATUS    POWER    POWER  CLASS
-----------------------------------------------------------------ge0/0        Up
Enabled   15.4     4.3    Class 4
```

Command History

Command introduced in Cisco SD-WAN Software Release 18.2.

Related Topics

show hardware alarms, on page 250
show hardware inventory, on page 254
show hardware real time information, on page 257
show hardware temperature-thresholds, on page 258
show interface, on page 265

show hardware real time information

show hardware real-time-information—Display real-time information about hardware vEdge routers, including board details, hardware components, bootloader version, and temperature threshold history (on vEdge routers only).

show hardware real-time-information

Command History

Release	Modification
17.2	Command introduced.

Output Fields

The output fields are self-explanatory.

Example

```
vEdge# show hardware real-time-information
Hardware Information
-------------------------------------------------
Baseboard Details:
board type:board_type: 20003
board serial number:board_serial_number: 11OG119160463
-------------------------------------------------
TPM Details:
Chip name: R5H30211
Firmware name: Board ID 2.0
Firmware version: 0x20A13811
-------------------------------------------------
Pheripheral Connected:
HW
DEV
HW TYPE INDEX VERSION PART NUMBER SERIAL NUMBER HW DESCRIPTION
-------------------------------------------------------------------------------------------------------------------------------------------------------
Chassis 0 7.0 vEdge-1000 11OG119160463 vEdge-1000. CPLD rev: 0xB, PCB rev: G.
CPU 0 None None None Quad-Core Octeon-II
DRAM 0 None None None 4096 MB DDR3
Flash 0 None None None Flash: Type - nor, Size - 16.00 MB
eMMC 0 None None None eMMC: Size - 7.31 GB
PIM 0 None ge-fixed-8 None 8x 1GE Fixed Module
Transceiver 1 A FCLF8521P2BTL PVM16HM Port 0/1, Type 0x08 (1G Copper), Date: 2016/5/22, Vendor: FINISAR CORP. , Support: Yes
FanTray 0 None None None Fixed Fan Tray - 2 Fans
PEM 0 None None None Manufacturer: NA, Product: NA, Date: NA
PEM 1 None None None Manufacturer: NA, Product: NA, Date: NA
-------------------------------------------------
Bootloader version:
Backup U-Boot
U-Boot 2013.07-g1874683 (Build time: Mar 22 2017 - 12:57:51)
U-Boot 2013.07-g1874683 (Build time: Mar 22 2017 - 12:57:51)
```

```
Active U-Boot
U-Boot 2013.07-g1874683 (Build time: Mar 22 2017 - 12:57:51)
U-Boot 2013.07-g1874683 (Build time: Mar 22 2017 - 12:57:51)
-------------------------------------------------
Temperature threshold history:
-------------------------------------------------
Critial Kernel Logs:
kern.err: Jul 12 23:14:03 vedge kernel: Error: PEXP_SLI_INT_SUM[RML_TO]
kern.err: Jul 12 23:14:03 vedge kernel: sd 0:0:0:0: [sda] No Caching mode page found
kern.err: Jul 12 23:14:03 vedge kernel: sd 0:0:0:0: [sda] Assuming drive cache: write through
kern.err: Jul 12 23:14:03 vedge kernel: sd 0:0:0:0: [sda] No Caching mode page found
kern.err: Jul 12 23:14:03 vedge kernel: sd 0:0:0:0: [sda] Assuming drive cache: write through
kern.err: Jul 12 23:14:03 vedge kernel: sd 0:0:0:0: [sda] No Caching mode page found
kern.err: Jul 12 23:14:03 vedge kernel: sd 0:0:0:0: [sda] Assuming drive cache: write through
```

Operational Commands

show hardware alarms

show hardware environment

show hardware temperature-thresholds

show interface sfp detail

show interface sfp diagnostic

Related Topics

show hardware alarms, on page 250
show hardware environment, on page 251
show hardware temperature-thresholds, on page 258
show interface sfp detail, on page 283
show interface sfp diagnostic, on page 287

show hardware temperature-thresholds

show hardware temperature-thresholds—Display temperature thresholds at which green, yellow, and red alarms are generated (on vEdge routers only).

show hardware temperature-thresholds [**board** [*board-number*]] [**cpu**] [**dram**]

Syntax Description

None	None: Display status information about all router components.
board [*board-number*]	Board Temperature Threshold: Display the alarm threshold temperature for all boards in the router or for a specific board.
cpu	CPU Temperature Threshold: Display the alarm threshold temperature for the router's CPU.
dram	DRAM Temperature: Display the alarm threshold temperature for the router's DRAM.

Command History

Release	Modification
14.1	Command introduced.

Output Fields

The output fields are self-explanatory.

Example

```
vEdge# show hardware temperature-thresholds

               HW      FAN     FAN     YELLOW  YELLOW   RED     RED
HW SENSOR      DEV     SPEED   SPEED   ALARM   ALARM    ALARM   ALARM
TYPE           INDEX   NORMAL  HIGH    NORMAL  BAD FAN  NORMAL  BAD FAN
-------------------------------------------------------------------------
Board          0       64      64      65      60       80      75
Board          1       64      64      65      60       80      75
Board          2       64      64      65      60       80      75
Board          3       64      64      65      60       80      75
CPU Junction   0       79      79      80      75       95      90
DRAM           0       64      64      65      60       80      75

vEdge-Cloud# show hardware inventory

          HW
          DEV                            SERIAL
HW TYPE   INDEX  VERSION  PART NUMBER    NUMBER   HW DESCRIPTION
-----------------------------------------------------------------------
Chassis   0      1.0      vEdge-Cloud    sim      vEdge-Cloud
PIM       0      None     ge-8           None     Max 8 x 1GE VM ports

vEdge-Cloud# show hardware alarms
# No entries found.
vEdge-Cloud# show hardware temperature-thresholds
% No entries found.
```

Operational Commands

show hardware alarms

show hardware environment

show hardware real-time-information

show interface sfp detail

show interface sfp diagnostic

Related Topics

show hardware alarms, on page 250
show hardware environment, on page 251
show hardware real time information, on page 257
show hardware temperature-thresholds, on page 258
show interface sfp diagnostic, on page 287

show history

show history—Display the history of the commands issued in operational mode.

show history [*number*]

Syntax Description

None	None: List all operational commands that have been issued during the current login session.
number	Specific Number of Commands: Display the specified number of most recent commands that have been issued in operational mode.

Command History

Release	Modification
14.1	Command introduced.

Output Fields

The output fields are self-explanatory.

Example

```
vm4(config)# show history 12
02:07:53 -- show configuration merge banner
02:09:45 -- show configuration rollback changes 14
02:10:11 -- show full-configuration
02:14:20 -- show full-configuration banner
02:15:52 -- show configuration running
02:18:18 -- show configuration running banner
02:22:06 -- show configuration rollback changes 1
02:22:13 -- show configuration rollback changes 2
02:22:16 -- show configuration rollback changes 3
02:34:36 -- show configuration this omp
02:34:43 -- show configuration this banner
02:35:32 -- show history 12
vm4(config)#
```

Operational Commands

show history

Related Topics

clear history, on page 34
history, on page 81
show history

show igmp groups

show igmp groups—Display information about multicast groups (on vEdge routers only).

show igmp groups [**vpn** *vpn-id*]**show igmp groups vpn** *vpn-id group-property*

Syntax Description

None	None: Display information about all multicast groups.
group-property	Group Properties: *group-property* Display group information for a specific IGMP multicast group. *group-property* can be one of the following: **event**, **expires**, **state**, **up-time**, **v1-expires**, and **v1-members-present**. Note that these options correspond to the column heads in the output of the plain **show igmp groups** command.
vpn [*vpn-id*]	VPN: Display multicast group information for interfaces in a specific VPN.

Command History

Release	Modification
14.3	Command introduced.

Output Fields

The output fields are self-explanatory.

Example

```
vEdge# show igmp groups
                          V1
     IF                   MEMBERS                                    V1
VPN  NAME   GROUP         PRESENT  STATE            UPTIME      EXPIRES  EXPIRES  EVENT
-------------------------------------------------------------------------------------------
1    ge0/5  229.229.229.229  false    members-present  0:01:33:52  -        -        init-event
```

Operational Commands

clear igmp interface

igmp

show igmp groups

show igmp statistics

how igmp summary

Related Topics

igmp

show igmp interface, on page 262

show igmp statistics, on page 263
show igmp summary, on page 264

show igmp interface

show igmp interface—Display information about the interfaces on which IGMP is enabled on the router (on vEdge routers only).

show igmp interface [**vpn** *vpn-id*]**show igmp interface vpn** *vpn-id igmp-property*

Syntax Description

None	None: Display information about all interfaces on which IGMP is enabled.
igmp-property	IGMP Options: Display interface information for a specific IGMP property. *igmp-property* can be one of the following: **event**, **group-count**, **if-addr**, **querier**, **querier-ip**, and **state**. Note that these options correspond to the column heads in the output of the plain **show igmp interface** command.
vpn*vpn-id*	VPN **vpn** *vpn-id* Display IGMP information for interfaces in a specific VPN.

Command History

Release	Modification
14.3	Command introduced.

Output Fields

The output fields are self-explanatory.

Example

```
vEdge# show igmp interface

                                                                                OTHER
     IF                      GROUP                          QUERY               QUERIER
VPN  NAME    IF ADDR         COUNT  QUERIER  QUERIER IP    INTERVAL    STATE    EXPIRY   EVENT
-------------------------------------------------------------------------------------------------
1    ge0/4  10.20.24.15/24  0      true     10.20.24.15   0:00:02:00  querier  -        init-event
1    ge0/5  56.0.1.15/24    1      true     56.0.1.15     0:00:01:51  querier  -        init-event
```

Operational Commands

clear igmp interface

igmp

show igmp groups

show igmp statistics

how igmp summary

Related Topics

clear igmp interface, on page 34
igmp
show igmp groups, on page 261
show igmp statistics, on page 263
show igmp summary, on page 264

show igmp statistics

show igmp statistics—Display IGMP statistics (on vEdge routers only).

show igmp statistics [**vpn** *vpn-id*]**show igmp statistics vpn** *vpn-id statistic*

Syntax Description

None	None: Display information about all interfaces on which IGMP is enabled.
group-property	Specific Statistic: *group-property* Display interface information for a specific IGMP statistic. *statistic* can be one of the following: **rx_error**, **rx_general_query**, **rx_group_query**, **rx_leave**, **rx_unknown**, **rx_v1_report**, **rx_v2_reporttx_error**, **tx_general_query**, and **tx_group_query**. Note that these options correspond to the column heads in the output of the plain **show igmp statistics** command.
VPN	VPN: **vpn** *vpn-id* Display IGMP group information for interfaces in a specific VPN.

Command History

Release	Modification
14.3	Command introduced.

Output Fields

The output fields are self-explanatory.

Example

```
vEdge# show igmp statistics

     RX       RX                                              TX       TX
     GENERAL  GROUP  RX V1   RX V2   RX     RX       RX     GENERAL  GROUP  TX
VPN  QUERY    QUERY  REPORT  REPORT  LEAVE  UNKNOWN  ERROR  QUERY    QUERY  ERROR
-------------------------------------------------------------------------------
1    0        0      0       0       0      0        0      238      0      0
```

Operational Commands

igmp

show igmp groups

show igmp interface

how igmp summary

Related Topics

igmp
show igmp groups, on page 261
show igmp interface, on page 262
show igmp summary, on page 264

show igmp summary

show igmp summary—Display information about the IGMP version and IGMP timers (on vEdge routers only).

show igmp summary [*igmp-property*]

Syntax Description

None	None: Display all IGMP version and timer information.
igmp-property	IGMP Properties: *igmp-property* Display information for a specific IGMP property. *group-property* can be one of the following: **last-member-query-count**, **last-member-query-response-time**, **querier-timeout**, **query-interval**, **query-response-time**, and **version**. Note that these options correspond to the column heads in the output of the plain **show igmp summary** command.

Command History

Release	Modification
14.3	Command introduced.

Output Fields

Output Field	Description
Last Member Query Count	How many group-specific query messages the router sends when it has receives a Leave Group message for a group before assuming that no members of the group remain on the interface. When no members appear to be present, the vEdge router removes the IGMP state for the group.
Last Member Query Response	How long the router waits, in seconds, to receive a response a group-specific query message. The default value is 1 second (1000 milliseconds). You cannot modify this value.

Output Field	Description
Other Querier Timeout	How long to wait for another IGMP querier to time out before assuming the role of querier. If IGMP on an interface or circuit detects another querier that has a lower IP than its own, it must become a non-querier on that network, and it starts watching for query messages from the querier. If the vEdge router has not received a query message from the querier in the Other Querier Timeout interval, it resumes the role of querier. The default other querier timeout value is 125 seconds. You cannot modify this value.
Query Interval	How often the router sends IGMP general query messages to solicit membership information. The default is 125 seconds. You cannot modify this value.
Query Response Interval	Maximum amount of time, in seconds, that the router waits to receive a response to a general query message. The default is 10 seconds. You cannot modify this value.
Version	IGMP version. Currently, vEdge routers run only IGMPv2.

Example

```
vEdge# show igmp summary
Version                     2
Query Interval              125 seconds
Query Response Interval     10 seconds
Last Member Query Response 1 seconds
Last Member Query Count     2
Other Querier Timeout       255 seconds
```

Operational Commands

igmp

show igmp groups

show igmp interface

how igmp statistics

Related Topics

igmp
show igmp groups, on page 261
show igmp interface, on page 262
show igmp statistics, on page 263

show interface

show interface—Display information about IPv4 interfaces on a Cisco vEdge device.

show interface [**detail**] [*interface-name*] [**vpn** *vpn-id*]

Syntax Description

None	None: Display standard information about the interfaces on the Cisco vEdge device.

detail	Detailed Interface Information: Display detailed information about the interfaces (available only on vEdge routers).
interface-name	Specific Interface: Display information about a specific interface. On vEdge routers, *interface-name* can be a physical interface (**ge** *slot*/*port*), a subinterface or VLAN (**ge** *slot*/*port*.*vlan-number*), the interface corresponding to the system IP address (**system**), the management interface (typically, **eth0**), or a GRE tunnel (**gre** *number*). On vSmart controllers, *interface-name* can be an interface (**eth** *number*) or the interface corresponding to the system IP address (**system**).
vpn *vpn-id*	Specific VPN: Display information about interfaces in a specific VPN.

Command History

Release	Modification
14.1	Command introduced.

Output Fields

The following are the fields in the show interface command output:

Output Fields	Description
1Duplex	Whether the interface is operating in duplex or simplex mode. This field does not apply to virtual interfaces, such as GRE, IRB, loopback, and system interfaces..
Encapsulation Type	Encapsulation configured on the interface with the encapsulation command.
Hardware Address	MAC address of the interface.
If Admin Status	Administrative status of the interface; that is, its status as a result of the interface's configuration. The status can be either Up or Down. By default, interfaces are administratively down, and you must include the no shutdown command in the interface's configuration to bring the interface up. An interface that is both administratively and operationally up is able to transmit and receive traffic. To bring down an interface administratively, include the shutdown command in the interface's configuration.
If Oper Status	Operational status of the interface; that is, its status as a result of operational factors. The status can be either Up or Down. An interface can be operationally up if it is Interface is administratively up, the interface link layer state is up, and the interface initialization has completed. An interface that is both administratively and operationally up is able to transmit and receive traffic. If the operational status is down, the interface is functionally down and is not able to transmit or receive any traffic.
MTU	MTU size for packets being send over the interface.

Output Fields	Description
Port Type	Describes the port's function from the point of view of the overlay network. It can be one of the following: **loopback**—Loopback interface. The device's system IP address is listed as a loopback interface. **service**—Interface for data traffic. **transport**—Interface running a DTLS control session.
RX Packets and TX Packets	For GRE interfaces, these fields show counts of the data traffic received and transmitted on GRE tunnels. To display GRE keepalive traffic counts, use the show tunnel gre-keepalives command. To display all GRE tunnel statistics, use the show tunnel statistics gre command.
Speed	Speed of the interface, in megabits per second (Mbps). This field does not apply to virtual interfaces, such as GRE, IRB, loopback, and system interfaces.
TCP MSS Adjust	Maximum segment size (MSS) of TCP SYN packets on the interface. For more information see tcp-mss-adjust.
Uptime	How long the interface has been up, in days, hours, minutes, and seconds.

The following are the additional fields included in the show interface detail command output:

- addr-type—Type of address configured on the interface, either IPv4 or IPv6, and how the address is configured, either dynamic or static.
- allow-service—Services allowed on the interface. For more information, see allow-service.
- arp-add-fails—Packets for which an ARP entry in the forwarding plane could not be created.
- bad-label—Packets dropped because of an invalid next-hop label record for a destination.
- cpu-policer-drops—Packets destined to the control plane dropped because they exceeded the CPU policer limit.
- dot1x-rx-pkts—802.1X packets received on the interface.
- dot1x-tx-pkts—802.1X packets transmitted on the interface.
- filter-drops—Packets dropped because of an implicit or explicit localized data policy (ACL) filter configuration.
- icmp-redirect-rx-drops—
- icmp-redirect-tx-drops—ICMP redirect packets dropped by the interface.
- if-addr, ip-address/broadcast-addr/secondary—Interface's primary unicast and broadcast addresses, and interface's secondary address, if one is configured.
- ifindex—Interface's SNMP index number.
- if-tracker-status—Whether interface tracking is enabled. For more information, see tracker.
- interface-disabled—Incoming packets dropped because the interface port is not enabled.

- mirror-drops—Fragmented packets that are being mirrored to a destination.
- route-lookup-fail—Packets that could not be forwarded because no route is present in the forwarding table (FIB).
- rx-arp-non-local-drops—Received ARP packets that do not match the destination IP address of any local IP address.
- rx-arp-replies—Received ARP replies
- rx-arp-rate-limit-drops—Currently, the software does not increment this counter.
- rx-arp-reply-drops—Currently, the software does not increment this counter.
- rx-arp-request-fail—Packets that could not be received because there is not corresponding MAC address.
- rx-arp-requests—Received ARP requests.
- rx-broadcast-pkts—Received broadcast packets.
- rx-drops—Received packets that were dropped.
- rx-errors—Received packets that were errored.
- rx-ip-ttl-expired—Received IP packets whose time-to-live value expired.
- rx-multicast-pkts—Received multicast packets.
- rx-non-ip-drops—Received packets other than IP or ARP packets that the interface dropped.
- rx-oversize-errors—Currently, the software does not increment this counter.
- rx-octets—Number of octets in received packets.
- rx-packets—Received packets.
- rx-policer-drops—Incoming packets dropped because of the rate exceeded the configured ingress policer rate.
- rx-policer-remark—Received packets remarked as the result of a policer.
- rx-pps—Receipt rate of packets, in packets per second.
- rx-replay-integrity-drops—Received packets dropped because the IPsec packet arrive outside of the anti-replay window or because the integrity check performed by ESP or AH failed. To view the configured anti-replay window, use the show security-info command. To modify the anti-replay window size, use the security ipsec replay-window configuration command.
- rx-undersize-errors—Currently, the software does not increment this counter.
- rx-wred-drops—Incoming packets dropped because of a RED drop profile associated with an interface queue. To configure a RED drop profile, use the drops option when configuring a QoS scheduler.
- shaping-rate—Traffic rate on the interface if rate is configured with the shaping-rate command to be less than the maximum rate.
- split-horizon-drops—BGP packets dropped as a result of split-horizon determination that the router was advertising a route back on the same interface from which it was learned.

- tx-arp-rate-limit-drops—Number of ARP packets generated by the forwarding plane that exceed the CPU rate limit, which is 16 ARP packets sent towards the CPU and 128 ARP packets send towards physical ports.
- tx-broadcast-pkts—Transmission rate of broadcast packets, in packets per second.
- tx-drops—Transmitted packets that were dropped.
- tx-errors—Transmitted packets that were errored.
- tx-icmp-mirrored-drops—ICMP redirect packets dropped by the system.
- tx-icmp-policer-drops—ICMP packets generated by the system that were dropped because of ICMP policer limits.
- tx-multicast-pkts—Transmitted multicast packets.
- tx-no-arp-drops—Packets dropped in the forwarding plane because of a missing ARP entry for a destination IP address.
- tx-octets—Number of octets in transmitted packets.

Example

```
vEdge# show interface
                                      IF      IF                                                                  TCP
                  AF                  ADMIN   OPER    ENCAP                                       SPEED           MSS                 RX       TX
VPN  INTERFACE    TYPE  IP ADDRESS    STATUS  STATUS  TYPE   PORT TYPE  MTU   HWADDR             MBPS   DUPLEX  ADJUST  UPTIME      PACKETS
PACKETS
-------------------------------------------------------------------------------------------------------------------------------------------------------
0    ge0/0      ipv4  10.1.15.15/24  Up      Up      null   transport  1500  00:0c:29:7d:1e:fe  1000   full    1420    0:19:51:22  795641
857981
0    ge0/1      ipv4  10.1.17.15/24  Up      Up      null   service    1500  00:0c:29:7d:1e:08  1000   full    1420    0:19:42:43  5754     10
0    ge0/2      ipv4  -              Down    Up      null   service    1500  00:0c:29:7d:1e:12  1000   full    1420    0:19:51:27  5752     0
0    ge0/3      ipv4  10.0.20.15/24  Up      Up      null   service    1500  00:0c:29:7d:1e:1c  1000   full    1420    0:19:42:43  5763     9
0    ge0/6      ipv4  57.0.1.15/24   Up      Up      null   service    1500  00:0c:29:7d:1e:3a  1000   full    1420    0:19:42:43  5750     10
0    ge0/7      ipv4  10.0.100.15/24 Up      Up      null   service    1500  00:0c:29:7d:1e:44  1000   full    1420    0:19:48:22  7469     1346
0    system     ipv4  172.16.255.15/32 Up     Up      null   loopback   1500  00:00:00:00:00:00  0      full    1420    0:19:42:19  0        0
1    ge0/4      ipv4  10.20.24.15/24 Up      Up      null   service    1500  00:0c:29:7d:1e:26  1000   full    1420    0:19:42:40  13263    7653
1    ge0/5      ipv4  56.0.1.15/24   Up      Up      null   service    1500  00:0c:29:7d:1e:30  1000   full    1420    0:19:42:40  5730     8
512  eth0       ipv4  10.0.1.15/24   Up      Up      null   service    1500  00:50:56:00:01:0f  0      full    0       0:19:51:22  47033    31894
```

```
vEdge# show interface detail ge0/0
interface vpn 0 interface ge0/0 af-type ipv4
 if-admin-status         Up
 if-oper-status          Up
 if-addr
  ip-address     10.1.15.15/24
  broadcast-addr 10.1.15.255
  secondary      false
 encap-type              null
 port-type               transport
 ifindex                 1
 mtu                     1500
 hwaddr                  00:0c:29:7d:1e:fe
 speed-mbps              1000
 duplex                  full
```

```
auto-neg                false
pause-type              ""
tcp-mss-adjust          1420
uptime                  0:19:51:44
allow-service           dhcp,dns,icmp
rx-packets              795901
rx-octets               146499972
rx-errors               0
rx-drops                2920
tx-packets              858263
tx-octets               147918066
tx-errors               0
tx-drops                0
rx-pps                  11
rx-kbps                 16
tx-pps                  12
tx-kbps                 17
rx-arp-requests         44
tx-arp-replies          52
tx-arp-requests         2139
rx-arp-replies          2085
arp-add-fails           2
rx-arp-reply-drops      0
rx-arp-rate-limit-drops 0
tx-arp-rate-limit-drops 0
rx-arp-non-local-drops  13
tx-arp-request-fail     0
tx-no-arp-drops         0
rx-ip-ttl-expired       0
interface-disabled      0
rx-policer-drops        0
rx-non-ip-drops         0
filter-drops            0
mirror-drops            0
cpu-policer-drops       0
tx-icmp-policer-drops   0
tx-icmp-mirrored-drops  0
split-horizon-drops     0
route-lookup-fail       0
bad-label               0
rx-multicast-pkts       7511
rx-broadcast-pkts       2997
tx-multicast-pkts       7437
tx-broadcast-pkts       88
num-flaps               1
shaping-rate            0
dot1x-tx-pkts           0
dot1x-rx-pkts           0
rx-policer-remark       0
```

Operational Commands

show interface arp-stats

show interface description

show interface errors

show interface packet-sizes

show interface port-stats

show interface queue

show interface statistics

show ipv6 interface

show wlan interfaces

Related Topics

show interface arp-stats, on page 271
show interface description, on page 273
show interface errors, on page 275
show interface packet-sizes, on page 278
show interface port-stats, on page 280
show interface queue, on page 281
show interface statistics, on page 290
show ipv6 interface, on page 317
show wlan interfaces, on page 478

show interface arp-stats

show interface arp-stats—Display the ARP statistics for each interface (on vEdge routers only).

show interface arp-stats [**vpn** *vpn-id*] [*interface-name*]

Syntax Description

None	None: Display standard information about ARP statistics for each interface.
interface-name	Specific Interface: Display ARP statistics for a specific interface.
vpn*vpn-id*	VPN: Display ARP statistics for interfaces in a specific VPN.

Command History

Release	Modification
14.1	Command introduced.

Output Fields

The following are the fields included in the show interface arp-stats command output:

- rx-arp-requests/tx-arp-replies, RX Requests/Tx Replies—Number of ARP requests received on the interface, and number of replies sent to these ARP requests.
- tx-arp-requests/rx-arp-replies, TX Requests/Rx Replies—Number of ARP requests sent on the interface, and number of replies received to these ARP requests.
- arp-add-fails, Add Fails—Packets for which an ARP entry in the forwarding plane could not be created.

- rx-arp-reply-drops, RX Reply Drops—Currently, the software does not increment this counter.
- rx-arp-rate-limit-drops, RX Rate Limit Drops—Currently, the software does not increment this counter.
- tx-arp-rate-limit-drops, TX Rate Limit Drops—Number of ARP packets generated by the forwarding plane that exceed the CPU rate limit, which is 16 ARP packets sent towards the CPU and 128 ARP packets send towards physical ports.
- rx-arp-non-local-drops, RX Non-Local Drops—Received ARP packets that do not match the destination IP address of any local IP address.
- tx-arp-request-fail—Packets that could not be transmitted because an ARP request for the MAC address corresponding to the destination IP address was unable to retrieve a MAC address.
- tx-no-arp-drops, TX No ARP Drops—Packets dropped in the forwarding plane because of a missing ARP entry for a destination IP address.

Example

```
vEdge# show interface arp-stats
                                                                                RX     RX          TX          RX          TX       TX
                     AF    RX        TX       TX        RX       ADD    REPLY  RATE-LIMIT  RATE-LIMIT  NON-LOCAL  REQUEST  NO-ARP
VPN  INTERFACE       TYPE  REQUESTS  REPLIES  REQUESTS  REPLIES  FAILS  DROPS  DROPS       DROPS       DROPS      FAIL     DROPS
-------------------------------------------------------------------------------------------------------------------------------------
0    ge0/0           ipv4  0         16       255894    255786   1      0      0           0           11         0        0
0    ge0/1           ipv4  0         17       852858    0        0      0      0           0           0          0        0
0    ge0/2           ipv4  0         0        0         0        0      0      0           0           0          0        0
0    ge0/3           ipv4  0         0        0         0        0      0      0           0           0          0        0
0    ge0/4           ipv4  0         0        0         0        0      0      0           0           0          0        0
0    ge0/5           ipv4  0         0        0         0        0      0      0           0           0          0        0
0    ge0/6           ipv4  0         0        0         0        0      0      0           0           0          0        0
0    ge0/7           ipv4  0         0        0         0        0      0      0           0           0          0        0
0    system          ipv4  -         -        -         -        -      -      -           -           -          -        -
0    vmanage_system  ipv4  -         -        -         -        -      -      -           -           -          -        -
1    ge0/7.23        ipv4  0         8        0         0        0      0      0           0           0          0        0
512  eth0            ipv4  -         -        -         -        -      -      -           -           -          -        -
vEdge# show interface arp-stats ge0/0 | tab
                                                                      RX     RX          TX          RX          TX       TX
                AF    RX        TX       TX        RX       ADD    REPLY  RATE-LIMIT  RATE-LIMIT  NON-LOCAL  REQUEST  NO-ARP
VPN  INTERFACE  TYPE  REQUESTS  REPLIES  REQUESTS  REPLIES  FAILS  DROPS  DROPS       DROPS       DROPS      FAIL     DROPS
-------------------------------------------------------------------------------------------------------------------------------
0    ge0/0      ipv4  0         16       255824    255716   1      0      0           0           11         0        0

vEdge# show interface arp-stats ge0/0
interface vpn 0 interface ge0/0 af-type ipv4
rx-arp-requests         0
tx-arp-replies          16
tx-arp-requests         255828
rx-arp-replies          255720
arp-add-fails           1
rx-arp-reply-drops      0
rx-arp-rate-limit-drops 0
tx-arp-rate-limit-drops 0
rx-arp-non-local-drops  11
```

```
tx-arp-request-fail     0
tx-no-arp-drops         0
Release Information
```

Operational Commands

show arp

show interface

show interface description

show interface errors

show interface packet-sizes

show interface port-stats

show interface queue

show interface statistics

Related Topics

show arp, on page 185
show interface, on page 265
show interface description, on page 273
show interface errors, on page 275
show interface packet-sizes, on page 278
show interface port-stats, on page 280
show interface queue, on page 281
show interface statistics, on page 290

show interface description

show interface description—Display information information, including the configured interface description.

show interface description [**vpn** *vpn-id* [*interface-name*]

Options

None	None: Display information about all interfaces, including any configured interface description.
interface-name	Specific Interface: Display information about a specific interface.
vpn *vpn-id*	VPN: Display information about interfaces in a specific VPN.

Command History

Release	Modification
14.3	Command introduced.

Output Fields

The output fields are self-explanatory.

Example

```
vEdge# show interface description

                                  IF      IF
                                  ADMIN   OPER
VPN  INTERFACE  IP ADDRESS        STATUS  STATUS  DESCRIPTION
-----------------------------------------------------------------------
0    ge0/0      10.1.15.15/24     Up      Up      Internet connection
0    ge0/1      10.1.17.15/24     Up      Up      -
0    ge0/2      -                 Down    Up      -
0    ge0/3      10.0.20.15/24     Up      Up      -
0    ge0/6      57.0.1.15/24      Up      Up      -
0    ge0/7      10.0.100.15/24    Up      Up      -
0    system     172.16.255.15/32  Up      Up      -
```

Operational Commands

description

show interface

show interface arp-stats

show interface errors

show interface packet-sizes

show interface port-stats

show interface queue

show interface statistics

Related Topics

description
show interface, on page 265
show interface arp-stats, on page 271
show interface errors, on page 275
show interface packet-sizes, on page 278
show interface port-stats, on page 280
show interface queue, on page 281
show interface statistics, on page 290

show interface errors

show interface errors—Display error statistics for interfaces (on vEdge routers only).

show interface errors [**vpn** *vpn-id*] [*interface-name*]

Syntax Description

None	None: Display standard information about errors for each interface.
interface-name	Specific Interface: Display error information for a specific interface.
vpn*vpn-id*	VPN: Display error information for interfaces in a specific VPN.

Command History

Release	Modification
14.1	Command introduced.

Output Fields

Following are explanations of the output fields:

- arp-add-fails—Packets for which an ARP entry in the forwarding plane could not be created.
- bad-label—Packets dropped because of an invalid next-hop label record for a destination.
- cpu-policer-drops—Packets destined to the control plane dropped because they exceeded the CPU policer limit.
- filter-drops—Packets dropped because of an implicit or explicit localized data policy (ACL) filter configuration.
- fragment-df-drops—Packets dropped because their size is larger than the configure MTU, if the Don't Fragment bit is set.
- interface-disabled—Incoming packets dropped because the interface port is not enabled.
- ip-fwd-null-hop—Packets that could not be forwarded because the next-hop address was invalid or the next hop was unavailable.
- ip-fwd-unknown-nh-type—Packets dropped because the next-hop type was unknown.
- mirror-drops—Fragmented packets that are being mirrored to a destination.
- port-disabled-rx—Incoming packets dropped because the interface port is not enabled.
- port-disabled-tx—Outgoing packets dropped because the interface port is not enabled.
- route-lookup-fail—Packets that could not be forwarded because no route is present in the forwarding table (FIB).

- rx-arp-cpu-rate-limit-drops—ARP reply packets dropped because the number of packets exceeded the CPU rate limit.
- rx-arp-non-local-drops—Received ARP packets that do not match the destination IP address of any local IP address.
- rx-arp-rate-limit-drops—Currently, the software does not increment this counter.
- rx-arp-reply-drops—Currently, the software does not increment this counter.
- rx-dmac-filter-drops—Received packets that do not match the destination MAC address corresponding to the Layer 3 interface.
- rx-fcs-align-errors— In MIPS-based Cisco vEdge devices, like Cisco vEdge 1000 or Cisco vEdge 2000, this counter is the sum of all dropped error packets. The errors may be caused due to:
  - FCS (frame check sequence) errors
  - alignment errors

  These errors are detected at the hardware layer but are not related to DMAC (Destination MAC) filter drop or lack of room in the receiver FIFO.
- rx-implicit-acl-drops—Received packets dropped because of an implicit route policy (access list). Router tunnel interfaces also have implicit ACLs, which are also referred to as services. Some of these are present by default on the tunnel interface, and they are in effect unless you disable them. Through configuration, you can also enable other implicit ACLs. On vEdge routers, the following services are enabled by default: DHCP (for DHCPv4 and DHCPv6), DNS, and ICMP. You can also enable services for BGP, Netconf, NTP, OSPF, SSHD, and STUN. To enable the logging of the headers of packets dropped because they do not match a service configure with an allow-service command, configure policy implicit-acl-logging (on vEdge routers only).
- rx-inb-errors—Currently, the software does not increment this counter.
- rx-interface-not-found—Packets dropped because of an invalid VLAN tag.
- rx-ip-errors—Received packets whose IP or Thernet header could not be parsed.
- rx-ip-ttl-expired—Received IP packets whose time-to-live value expired.
- rx-non-ip-drops—Received packets other than IP or ARP packets that the interface dropped.
- rx-oversize-errors—Currently, the software does not increment this counter.
- rx-policer-drops—Incoming packets dropped because of the rate exceeded the configured ingress policer rate.
- rx-replay-integrity-drops—Received packets dropped because the IPsec packet arrive outside of the anti-replay window or because the integrity check performed by ESP or AH failed. To view the configured anti-replay window, use the show security-info command. To modify the anti-replay window size, use the security ipsec replay-window configuration command.
- rx-undersize-errors—Currently, the software does not increment this counter.
- rx-wred-drops—Incoming packets dropped because of a RED drop profile associated with an interface queue. To configure a RED drop profile, use the drops option when configuring a QoS scheduler.
- split-horizon-drops—BGP packets dropped as a result of split-horizon determination that the router was advertising a route back on the same interface from which it was learned.

- tx-arp-rate-limit-drops—Number of ARP packets generated by the forwarding plane that exceed the CPU rate limit, which is 16 ARP packets sent towards the CPU and 128 ARP packets send towards physical ports.
- tx-arp-request-fail—Packets that could not be transmitted because an ARP request for the MAC address corresponding to the destination IP address was unable to retrieve a MAC address.
- tx-collision-drops—Packets dropped because the interface attempted to send packets at the same time.
- tx-fragment-drops—Packets dropped because of issues related to fragmentation, such as when a fragment exceeds the MTU size when the DF bit is set and when issues occur in reassembling packets after fragmentation.
- tx-fragment-needed—Packets requiring fragmentation because they are larger than the interface's MTU.
- tx-icmp-mirrored-drops—ICMP redirect packets dropped by the system.
- tx-icmp-policer-drops—ICMP packets generated by the system that were dropped because of ICMP policer limits.
- tx-interface-disabled—Currently, the software does not increment this counter.
- tx-no-arp-drops—Packets dropped in the forwarding plane because of a missing ARP entry for a destination IP address.
- tx-underflow-pkts—Packets dropped during transmission because packet data was not made available to the TX FIFO in time. This situation can result in FCS errors on the receiving side.

Example

```
vEdge# show interface errors
interface vpn 0 interface ge0/0
arp-add-fails           25
rx-arp-reply-drops      0
rx-arp-rate-limit-drops 2
tx-arp-rate-limit-drops 0
rx-arp-non-local-drops  183
tx-arp-request-fail     0
tx-no-arp-drops         1
rx-ip-ttl-expired       0
rx-ip-errors            0
interface-disabled      0
rx-policer-drops        0
rx-non-ip-drops         144
filter-drops            0
mirror-drops            0
cpu-policer-drops       0
split-horizon-drops     0
route-lookup-fail       0
bad-label               0
rx-dmac-filter-drops    44
rx-drop-pkts            0
rx-drop-octets          0
rx-wred-drops           0
rx-interface-not-found  0
rx-inb-errors           0
rx-oversize-errors      0
rx-fcs-align-errors     0
rx-undersize-errors     0
tx-underflow-pkts       0
```

```
tx-collision-drops      0
...
```

Operational Commands

show interface

show interface arp-stats

show interface description

show interface packet-sizes

show interface port-stats

show interface queue

show interface statistics

Related Topics

show interface, on page 265
show interface arp-stats, on page 271
show interface description, on page 273
show interface packet-sizes, on page 278
show interface port-stats, on page 280
show interface queue, on page 281
show interface statistics, on page 290

show interface packet-sizes

show interface packet-sizes—Display packet size information for each interface (on MIPS routers only).

show interface packet-sizes [**vpn** *vpn-id*] [*interface-name*]

Syntax Description

None	None: Display standard packet size information for each interface.
interface-name	Specific Interface: *interface-name* Display packet size information for a specific interface.
vpn*vpn-id*	VPN: Display packet size information for interfaces in a specific VPN.

Command History

Release	Modification
14.1	Command introduced.

Output Fields

The output fields are self-explanatory.

Example

```
vEdge# show interface packet-sizes
                                                                                                                        RX                                                          TX
TX      TX      TX
                    RX                                   RX PKT  RX PKT  RX PKT  PKT                                                         PKT
PKT     PKT     PKT
                  RX PKT  PKT    RX PKT   RX PKT    SIZE    SIZE    SIZE    SIZE    TX PKT  TX PKT  TX PKT    TX PKT    SIZE
SIZE    SIZE    SIZE
                  SIZE    SIZE   SIZE 65  SIZE 128  256     512     1024    GT      SIZE    SIZE    SIZE 65   SIZE 128  256
512     1024    GT      NUM
VPN  INTERFACE  64      LT 64  127      255       511     1023    1518    1518    64      LT 64   127       255       511
1023    1518    1518    FLAPS
---------------------------------------------------------------------------------------------------------------------------------------------------------
0    ge0/0      36054   0      267476   17125160  260171  196894  1857213  0      36396   36396   18471527  18471527  0
0       0       0       0
0    ge0/2      0       0      0        0         0       0       0        0      0       0       0         0         0
0       0       0       0
0    ge0/4      0       0      0        0         0       0       0        0      0       0       0         0         0
0       0       0       0
0    ge0/5      0       0      0        0         0       0       0        0      0       0       0         0         0
0       0       0       0
0    ge0/6      0       0      0        0         0       0       0        0      0       0       0         0         0
0       0       0       0
0    ge0/7      0       0      0        0         0       0       0        0      0       0       0         0         0
0       0       0       0
0    system     -       -      -        -         -       -       -        -      -       -       -         -         -
-       -       -       0
1    ge0/1      445095  0      4350156  611392    214008  143019  1454843  0      10091   10091   17272     17272     0
0       0       0       1
1    ge0/3      165631  0      2348140  1235047   321523  188447  3458507  0      673392  673392  396377    396377    0
0       0       0       0
512  mgmt0      -       -      -        -         -       -       -        -      -       -       -         -         -
-
```

Operational Commands

show interface

show interface arp-stats

show interface description

show interface errors

show interface port-stats

show interface queue

show interface statistics

Related Topics

show interface, on page 265
show interface arp-stats, on page 271
show interface description, on page 273
show interface errors, on page 275
show interface port-stats, on page 280
show interface queue, on page 281
show interface statistics, on page 290

show interface port-stats

show interface port-stats—Display interface port statistics (on MIPS vEdge routers only).

show interface port-stats [**vpn** *vpn-id*] [*interface-name*]

Syntax Description

None	None: Display standard interface port statistics.
interface-name	Specific Interface: Display port statistics for a specific interface.
vpn*vpn-id*	VPN: vpn vpn-id Display port statistics for a specific VPN.

Command History

Release	Modification
14.1	Command introduced.

Output Fields

The output fields are self-explanatory.

Example

```
vEdge# show interface port-stats
                        RX
                 RX     DMAC     RX     RX       RX     RX                  RX        RX FCS  RX          TX          TX          TX
    TX                     TX          TX
                PAUSE   FILTER   DROP   DROP     WRED   INTERFACE   RX INB  OVERSIZE  ALIGN   UNDERSIZE   UNDERFLOW   COLLISION   PAUSE
  FRAGMENTS   TX          FRAGMENT   WRED    LLQ
VPN  INTERFACE   PKTS    DROPS    PKTS   OCTETS   DROPS   NOT FOUND   ERRORS   ERRORS    ERRORS   ERRORS      PKTS        DROPS       PKTS
   NEEDED      FRAGMENTS   DROPS      DROPS   DROPS
-------------------------------------------------------------------------------------------------------------------------------------------
0    ge0/0       0       975      0      0        0       0           0        0         0        0           0           0           0
    0           0           0          -       0
0    ge0/2       0       0        0      0        0       0           0        0         0        0           0           0           0
    0           0           0          -       0
0    ge0/4       0       0        0      0        0       0           0        0         0        0           0           0           0
    0           0           0          -       0
0    ge0/5       0       0        0      0        0       0           0        0         0        0           0           0           0
    0           0           0          -       0
0    ge0/6       0       0        0      0        0       0           0        0         0        0           0           0           0
    0           0           0          -       0
0    ge0/7       0       0        0      0        0       0           0        0         0        0           0           0           0
    0           0           0          -       0
0    system      -       -        -      -        -       -           -        -         -        -           -           -           -
    -           -           -          -       -
1    ge0/1       0       0        0      0        0       0           0        0         0        0           0           0           0
    0           0           0          -       0
1    ge0/3       0       27       0      0        0       0           0        0         0        0           0           0           0
    0           0           34         -       0
512  mgmt0       -       -        -      -        -       -           -        -         -        -           -           -           -
    -           -           -          -       -
```

Operational Commands

show interface

show interface arp-stats

show interface description

show interface errors

show interface packet-sizes

show interface queue

show interface statistics

Related Topics

show interface, on page 265
show interface arp-stats, on page 271
show interface description, on page 273
show interface errors, on page 275
show interface packet-sizes, on page 278
show interface queue, on page 281
show interface statistics, on page 290

show interface queue

show interface queue—Display interface queue statistics (on vEdge routers only).

show interface queue [**vpn** *vpn-id*] [*interface-name*]

Syntax Description

None	None: Display standard interface queue statistics.
interface-name	Specific Interface: Display interface queue statistics for a specific interface.
vpn*vpn-id*	VPN: Display interface queue statistics for interfaces in a specific VPN.

Note The queue drop details are dispalyed when you pass commands, **`show interface statistics`** and **`show interface port-stats`**.

Command History

Release	Modification
14.1	Command introduced.
19.1	Added attributes to the command output: queue-depth, max-depth, avg-queue, queue-pps, queue-drop-pps

Output Fields

QNUM

Queue number. Hardware vEdge routers have 8 queues, numbered 0 through 7. From 17.2.7 Release onwards, vEdge Cloud software router have 8 queues, numbered 0 through 7.

The remaining output fields are self-explanatory.

Example

```
vedge# show interface queue ge0/0

                                        TAIL     TAIL    RED      RED                                                    QUEUE
                    AF                  DROP     DROP    DROP     DROP     TX       TX       QUEUE  MAX    AVG    QUEUE  DROP
VPN  INTERFACE      TYPE  QNUM  QUEUED  PACKETS  BYTES   PACKETS  BYTES    PACKETS  BYTES    DEPTH  DEPTH  QUEUE  PPS    PPS
-------------------------------------------------------------------------------------------------------------------------------
0    ge0/0          ipv4  0     29654   0        0       0        0        29654    9763602  0      0      0      1      0
                           1     0       0        0       0        0        0        0        0      0      0      0      0
                           2     0       0        0       0        0        0        0        0      0      0      0      0
                           3     0       0        0       0        0        0        0        0      0      0      0      0
                           4     0       0        0       0        0        0        0        0      0      0      0      0
                           5     0       0        0       0        0        0        0        0      0      0      0      0
                           6     0       0        0       0        0        0        0        0      0      0      0      0
                           7     0       0        0       0        0        0        0        0      0      0      0      0
```

Operational Commands

show interface

show interface arp-stats

show interface description

show interface errors

show interface packet-sizes

show interface port-stats

show interface statistics

Related Topics

show interface, on page 265
show interface arp-stats, on page 271
show interface description, on page 273
show interface errors, on page 275
show interface packet-sizes, on page 278
show interface port-stats, on page 280
show interface statistics, on page 290

show interface sfp detail

show interface sfp detail—Display detailed SFP status and digital diagnostic information for bytes 0 through 95 of an SPF A0 section, as described in SFF-8472 (on vEdge routers only). This command also provides information about the types of fiber supported, the distance the SFP can drive, and the wavelength used by the SFP. The output of this command is useful for diagnosing issues with a troublesome SFP link.

show interface sfp detail [*interface-name*]

Syntax Description

None	None: Display detailed information for all interfaces in the router.
interface-name	Interface Name: *interface-name* Display detailed information for the specific interface.

Command History

Release	Modification
16.1	Command introduced.

Output Fields

The output fields are drawn from the SFP addresses listed below. Not all fields are valid or make sense for all SFP types.

Table 3: SFP Types

Field Name	Value	SFP Address
Physical identifier	Physical device identifier	A0.0-1
Connector type	Values such as LC, SC, and RJ45	A0.2
Transceiver compliance (compatibility)	List of compliance values	A0.3 to A0.10, A0.36
Encoding	Values such as 8b10b and 64b66b	A0.11
Nominal speed	Speed, in bps	A0.12, A0.66 to A0.67
Rate select options	Rate identifiers	A0.13
Single-mode fiber link length	Length, in km	A0.14 to 15
50-µm multimode (OM2) fiber link length	Length, in meters	A0.16
65-µm multimode (OM1) fiber link length	Length, in meters	A0.17

Field Name	Value	SFP Address
50-µm multimode (OM4) active cable/copper link length	Length, in meters	A0.18
50-µm multimode (OM3) fiber link length	Length, in meters	A0.19
Vendor name	16-byte ASCII string	A0.20 to A0.35
Vendor OUI	3-byte hexadecimal string	A0.37 to A0.39
Vendor part number	16-byte ASCII string	A0.40 to A0.55
Vendor revision	4-byte ASCII string	A0.56 to A0.59
Vendor serial number	16-byte ASCII string	A0.68 to A0.83
Date code	Date string as yymmddll, where l is the lot code	A0.84 to A0.91
Laser wavelength	Value or compliance string, in nm	A0.60 to A0.61
Feature options	List of bits, as strings	A0.64 to A0.65
Diagnostic monitoring options	List of bits, as strings	A0.92
Enhanced options	List of bits, as strings	A0.93
SFP compliance level	Compliance specification string	A0.94

Fiber SFPs

Example

```
vEdge-1000# show interface sfp detail ge0/5
sfp detail ge0/5
 Present                 Yes
 Physical identifier     SFP/SFP+
 Connector type          "LC (Lucent connector)"
 Transceiver compliance  "1000 Base-SX"
 Encoding                8b/10b
 Nominal speed           "1.20 Gbps"
 Rate select options     Unspecified
 62.5um OM1 fiber length 270m
 50um OM2 fiber length   550m
 Laser wavelength        850nm
 Vendor name             "AVAGO           "
 Vendor OUI              00:17:6a
 Vendor number           "AFBR-5710PZ     "
 Vendor revision         "    "
 Vendor serial number    "AM13412D2Z7     "
 Date code               2013/10/11
 Feature options
  Loss of signal        Yes
  Signal detect         No
  Tx fault              Yes
  Tx disable            Yes
```

```
 Rate select           No
 Tunable wavelength    No
 Rx decision threshold No
 Linear receive output No
 Power level           1
 Cooled laser          No
 Timing type           "Internal retimer"
 Paged A2 access       No
Digital diagnostics
 Supported No
Enhanced options
 Soft rate select control          No
 Application select control        No
 Soft rate select control/monitor  No
 Soft Rx LOS monitor               No
 Soft Tx fault monitor             No
 Soft Tx disable control/monitor   No
 Supports all alarms/warning flags No
```

Examples

For a 1-Gigabit Ethernet fiber SFP:

```
vEdge-2000# show interface sfp detail ge0/7
sfp detail ge0/7
 Present                 Yes
 Physical identifier     SFP/SFP+
 Connector type          "LC (Lucent connector)"
 Transceiver compliance  "10G Base-SR"
 Encoding                64b/66b
 Nominal speed           "10.30 Gbps"
 Rate select options     Unspecified
 62.5um OM1 fiber length 30m
 50um OM2 fiber length   80m
 50um OM3 fiber length   300m
 Laser wavelength        850nm
 Vendor name             "FINISAR CORP.   "
 Vendor OUI              00:90:65
 Vendor number           "FTLX8571D3BCL   "
 Vendor revision         "A   "
 Vendor serial number    "ARN13Z1         "
 Date code               2014/5/28
 Feature options
  Loss of signal         Yes
  Signal detect          No
  Tx fault               Yes
  Tx disable             Yes
  Rate select            No
  Tunable wavelength     No
  Rx decision threshold No
  Linear receive output No
  Power level            1
  Cooled laser           No
  Timing type            "Internal retimer"
  Paged A2 access        No
 Digital diagnostics
  Supported              Yes
  Calibration type       Internal
  Power measurement type "Average input power"
 Enhanced options
  Soft rate select control          No
  Application select control        No
  Soft rate select control/monitor  No
  Soft Rx LOS monitor               Yes
  Soft Tx fault monitor             Yes
```

```
  Soft Tx disable control/monitor   Yes
  Supports all alarms/warning flags Yes
```

For a 10-Gigabit Ethernet fiber SFP:

```
vEdge-2000# show interface sfp detail ge0/3
sfp detail ge0/3
 Present                  Yes
 Physical identifier      SFP/SFP+
 Connector type           "LC (Lucent connector)"
 Transceiver compliance   "10G Base-LR"
 Transceiver compliance   "1000 Base-LX"
 Encoding                 64b/66b
 Nominal speed            "10.30 Gbps"
 Rate select options      "8/4/2G Rx Rate_Select only"
 Single mode fiber length "10.00 km"
 Laser wavelength         1310nm
 Vendor name              "FINISAR CORP.   "
 Vendor OUI               00:90:65
 Vendor number            "FTLX1471D3BCV   "
 Vendor revision          "A   "
 Vendor serial number     "ASK273Z         "
 Date code                2014/11/12
 Feature options
  Loss of signal        Yes
  Signal detect         No
  Tx fault              Yes
  Tx disable            Yes
  Rate select           Yes
  Tunable wavelength    No
  Rx decision threshold No
  Linear receive output No
  Power level           1
  Cooled laser          No
  Timing type           "Internal retimer"
  Paged A2 access       No
 Digital diagnostics
  Supported              Yes
  Calibration type       Internal
  Power measurement type "Average input power"
 Enhanced options
  Soft rate select control          Yes
  Application select control        No
  Soft rate select control/monitor  Yes
  Soft Rx LOS monitor               Yes
  Soft Tx fault monitor             Yes
  Soft Tx disable control/monitor   Yes
  Supports all alarms/warning flags Yes
```

Copper SFPs

For a 1-Gigabit Ethernet copper SFP:

```
vEdge1000# show interface sfp detail ge0/4
sfp detail ge0/4
 Present                Yes
 Physical identifier    SFP/SFP+
 Connector type         Unknown/unspecified
 Transceiver compliance "1000 Base-T"
 Encoding               8b/10b
 Nominal speed          "1.20 Gbps"
 Rate select options    Unspecified
 Copper min link length 100m
 Vendor name            "FINISAR CORP.   "
```

```
Vendor OUI              00:90:65
Vendor number           "FCLF-8521-3     "
Vendor revision         "A   "
Vendor serial number    "PS21BN1         "
Date code               2014/7/8
Feature options
 Loss of signal         No
 Signal detect          No
 Tx fault               No
 Tx disable             Yes
 Rate select            No
 Tunable wavelength     No
 Rx decision threshold No
 Linear receive output No
 Power level            1
 Cooled laser           No
 Timing type            "Internal retimer"
 Paged A2 access        No
Digital diagnostics
 Supported No
Enhanced options
 Soft rate select control          No
 Application select control        No
 Soft rate select control/monitor  No
 Soft Rx LOS monitor               No
 Soft Tx fault monitor             No
 Soft Tx disable control/monitor   No
 Supports all alarms/warning flags No
```

Operational Commands

show hardware alarms

show hardware environment

show hardware inventory transceiver

show hardware temperature-thresholds

show interface sfp diagnostic

Related Topics

show hardware alarms, on page 250
show hardware environment, on page 251
show hardware inventory, on page 254
show hardware temperature-thresholds, on page 258
show interface sfp diagnostic, on page 287

show interface sfp diagnostic

show interface sfp diagnostic—Display SFP diagnostic information for fiber-based SFPs only (on vEdge routers only). This data is taken from bytes in the SFP A2 page, as described in SFF-8472. This section is not available for copper RJ45 SFPs.

The data for this output is stored in the A2 page of the SFP, and it contains minimum/maximum threshold parameters for laser transmitters and receivers, as well as dynamic run-time data values. This data page also might contain calibration data if the devices were externally calibrated. In this show command, the calibration data is used, if populated; however, it is not specifically be displayed.

show interface sfp diagnostic [*interface-name*]

Syntax Description

None	None: Display SFP diagnostic information for all interfaces in the router.
interface-name	Interface Name: Display SFP diagnostic information for the specific interface.

Command History

Release	Modification
16.1	Command introduced.

Output Fields

The output fields are drawn from the SFP addresses listed below. Not all fields are valid or make sense for all SFP types.

The following information is displayed for SFP diagnostics. Measurement information is presented as floating-point data.

Threshold and measurement data are all floating point data and are specified for accuracy relative to the source data. Measurement units are included in the value label.

In addition to allowing current measurements to be display, each of the following measurements has associated flag status indicating whether the measurement is in or out of alarm or warning state. This data is sourced from A2.112-117 SFP data.

Based on options declared to be supported by the SFP, several bit-based statuses are included in the display output. These include items such as select, transmit disable state, and receive loss-of-signal state, and are from A2.110.

Measurement	High Warning	High Alarm	Low Warning	Low Alarm	Current
Optical laser temperature	A2.44 to A2.45	A2.40 to A2.41	A2.46 to A2.47	A2.42 to A2.43	A2.106 to A2.107
Optical TEC current	A2.52 to A2.53	A2.48 to A2.49	A2.54 to A2.55	A2.50 to A2.51	A2.108 to A2.109
Receive power	A2.36 to A2.37	A2.32 to A2.33	A2.38 to A2.39	A2.34 to A2.35	A2.104 to A2.105
SFP temperature	A2.4 to A2.5	A2.0 to A2.1	A2.6 to A2.7	A2.2 to A2.3	A2.96 to A2.97
Supply voltage	A2.12 to A2.13	A2.8 to A2.9	A2.14 to A2.15	A2.10 to A2.11	A2.98 to A2.99
Transmit bias current	A2.20 to A2.21	A2.16 to A2.17	A2.22 to A2.23	A2.18 to A2.19	A2.100 to A2.101

Example

For a 1-Gigabit Ethernet copper SFP:

```
vEdge-1000# show interface sfp diagnostic ge0/3
sfp diagnostic ge0/3
 Present               Yes
 Diagnostics supported Yes
 SFP control/status
  Data ready          Yes
  Rx LOS              Yes
  Tx fault            No
  Soft rate select 0  No
  Soft rate select 1  No
  Rate select 0       No
  Rate select 1       No
  Soft Tx disable     No
  Tx disable          Yes

                          LOW       LOW       HIGH      HIGH     CURRENT
MEASUREMENT         UNIT  ALARM     WARNING   WARNING   ALARM    VALUE
-------------------------------------------------------------------------
Laser temperature   C     0.000     0.000     0.000     0.000    0.000
Rx power            mW    0.010     0.016     1.585     1.778    0.000
SFP temperature     C     -13.000   -8.000    73.000    78.000   32.023
Supply voltage      V     2.900     3.000     3.600     3.700    3.250
TEC current         mA    0.000     0.000     0.000     0.000    0.000
Tx bias current     mA    7.000     12.000    80.000    85.000   0.000
Tx power            mW    0.159     0.199     1.259     1.585    0.012

                    LOW     LOW       HIGH      HIGH
MEASUREMENT         ALARM   WARNING   WARNING   ALARM
-------------------------------------------------------
Laser temperature   N       N         N         N
Rx power            Y       Y         N         N
SFP temperature     N       N         N         N
Supply voltage      N       N         N         N
TEC current         N       N         N         N
Tx bias current     Y       Y         N         N
Tx power            Y       Y         N         N
```

Operational Commands

show hardware alarms

show hardware environment

show hardware inventory transceiver

show hardware temperature-thresholds

show interface sfp detail

Related Topics

show hardware alarms, on page 250
show hardware environment, on page 251
show hardware inventory, on page 254
show hardware temperature-thresholds, on page 258
show interface sfp detail, on page 283

show interface statistics

show interface statistics—Display interface statistics (on vEdge routers only).

show interface statistics [**vpn** *vpn-id*] [*interface-name*]**show interface detail statistics** [**diff**] [**interface** *interface-name*] [**vpn** *vpn-id*]

Syntax Description

None	None: Display standard interface statistics. Interface traffic rates are computed every 10 seconds.
diff	Statistics Changes: Display the changes in statistics since you last issued the **show interface statistics** command.
interface-name	Interface Name: Display interface statistics for a specific interface.
vpn*vpn-id*	VPN: Display interface statistics for interfaces in a specific VPN.

Command History

Release	Modification
14.1	Command introduced.

Output Fields

The output fields are self-explanatory.

Example

```
vEdge# show interface statistics
                                                                                                                        PPPOE   PPPOE   DOT1X
  DOT1X
              RX       RX        RX      RX     TX       TX        TX      TX     RX   RX    TX   TX    TX      RX      TX
  RX
VPN  INTERFACE  PACKETS  OCTETS    ERRORS  DROPS  PACKETS  OCTETS    ERRORS  DROPS  PPS  Kbps  PPS  Kbps  PKTS    PKTS    PKTS
  PKTS
-----------------------------------------------------------------------------------------------------------------------------------
0    ge0/0      147389   43326584  0       360    158925   42023634  0       0      12   18    13   16    0       0       0
  0
0    ge0/1      391      54500     0       0      5        210       0       0      0    0     0    0     0       0       0
  0
0    ge0/2      391      54500     0       0      0        0         0       0      0    0     0    0     0       0       0
  0
0    ge0/3      396      54800     0       5      5        210       0       0      0    0     0    0     0       0       0
  0
0    ge0/6      391      54500     0       0      4        168       0       0      0    0     0    0     0       0       0
  0
0    ge0/7      993      139010    0       89     586      233244    0       0      0    0     0    0     0       0       0
  0
0    system     0        0         0       0      0        0         0       0      0    0     0    0     0       0       0
  0
1    ge0/4      1524     148328    0       1      1175     97382     0       0      0    0     0    0     0       0       0
  0
```

```
1     ge0/5       391      54500     0       0       4         168       0       0       0     0     0     0     0       0       0
  0
512   eth0        7021     859885    0       0       4194      608754    0       0       5     5     3     5     0       0       0
  0
```

```
vSmart# show interface statistics

                    RX        RX         RX       RX      TX        TX         TX       TX      RX
RX     TX    TX
VPN   INTERFACE   PACKETS   OCTETS     ERRORS   DROPS   PACKETS   OCTETS     ERRORS   DROPS   PPS
Kbps   PPS   Kbps
-------------------------------------------------------------------------------------------------------------
0     eth0        8014      910140     0        0       5664      1032739    0        0       0     0
      0     0
0     eth1        131517    24476039   0        0       154517    37400773   0        0       12
18     14    28
0     eth3        -         -          -        -       -         -          -        -       -     -
      -     -
0     system      0         0          0        0       0         0          0        0       0     0
      0     0
512   eth2        414       56320      0        0       7         558        0        0       0     0
      0     0
```

Operational Commands

show interface

show interface arp-stats

show interface buffer-pool-status

show interface description

show interface errors

show interface packet-sizes

show interface port-stats

show interface queue

Related Topics

show interface, on page 265
show interface arp-stats, on page 271
show system buffer-pool-status, on page 450
show interface description, on page 273
show interface errors, on page 275
show interface packet-sizes, on page 278
show interface port-stats, on page 280
show interface queue, on page 281

show ip dns-snoop

Display details of a fully qualified domain name (FQDN) and its corresponding IP address mapping information.

The DNS snooping agent (DSA) maintains an "IP cache" table of fully qualified domain names (FQDN) and their corresponding IP addresses. The command displays the complete information in this table (**all** option), or details for specific FQDN's (**pattern** option) or IP addresses (**address** option).

(for Cisco IOS XE SD-WAN devices)

Command Syntax

show ip dns-snoop {**address** *ip-address* | **all** **pattern** *pattern*}

Syntax Description

address *ip-address*	Display details for a specific IP address in the DSA IP cache table.
all	Display details for all IP addresses in the DSA IP cache table.
pattern *pattern*	Display details for a specific FQDN in the DSA IP cache table, matching a text pattern.

Command Mode

Privileged EXEC mode

Command History

Release	Modification
Cisco IOS XE Amsterdam 17.2	Command introduced.

Examples

Example

```
Device# show ip dns-snoop all
IP Address            Client(s)      Expire      RegexId      Dirty Match
-------------------------------------------------------------------------------
192.168.0.1           0x1 992        0xef270000  0x00         cisco\.com
```

show ip fib

To display the IPv4 entries in the local forwarding table (on Cisco vEdge routers only), use the **show ip fib** command in privileged EXEC mode.

show ip fib [**vpn** *vpn-id*] [*ipv4-prefix/length*] [**tloc** { **color** *color* | **tloc-ip** *ip-address* }]

Syntax Description

	None: List standard information about the IPv4 entries in the forwarding table.

ipv4-prefix/length	Specific Prefix: List the forwarding table entry for the specified IPv4 prefix.
tloc [**color** *color* | **tloc-ip** *ip-address*]	TLOC-Specific Entries: Display forwarding table IPv4 entries for specific TLOCs.
vpn *vpn-id*	VPN-Specific Routes: List only the forwarding table IPv4 entries for the specified VPN.

Command History

Release	Modification
14.1	Command introduced.
Cisco SD-WAN Release 20.9.1	This command was modified. Support was added to display interservice replicated route VPN.

Examples

The following is a sample output from the **show ip fib vpn** command that shows the replicated route VPNs:

```
vEdge# show ip fib vpn 102
                          NEXTHOP     NEXTHOP   NEXTHOP  NEXTHOP  SA
VPN    PREFIX             IF NAME     ADDR      LABEL    VPN      INDEX    TLOC IP
  COLOR
------------------------------------------------------------------------------------------------
102    10.0.100.0/24      ge0/4.105   -         -        -        -        -
   -
102    10.51.51.16/32     ge0/4.105   -         -        -        -        -
   -
102    10.61.61.0/24      -           -         -        6        -        -
   -
```

Examples

The following is a sample output from the **show ip fib** command:

```
vEdge# show ip fib
                          NEXTHOP     NEXTHOP          NEXTHOP  SA

VPN    PREFIX             IF NAME     ADDR             LABEL    INDEX    TLOC IP
 COLOR
------------------------------------------------------------------------------------------------
0      10.0.5.0/24        ge0/0       10.1.15.13       -        -        -
 -
0      10.0.12.0/24       ge0/0       10.1.15.13       -        -        -
 -
0      10.0.20.0/24       ge0/3       -                -        -        -
 -
0      10.0.20.15/32      ge0/3       -                -        -        -
 -
0      10.0.100.0/24      ge0/7       -                -        -        -
 -
0      10.0.100.15/32     ge0/7       -                -        -        -
 -
0      10.1.14.0/24       ge0/0       10.1.15.13       -        -        -
 -
0      10.1.15.0/24       ge0/0       -                -        -        -
 -
0      10.1.15.15/32      ge0/0       -                -        -        -
 -
0      10.1.16.0/24       ge0/0       10.1.15.13       -        -        -
```

```
 -
0       10.1.17.0/24         ge0/1        -                 -         -         -
 -
0       10.1.17.15/32        ge0/1        -                 -         -         -
 -
0       57.0.1.0/24          ge0/6        -                 -         -         -
 -
0       57.0.1.15/32         ge0/6        -                 -         -         -
 -
0       172.16.255.15/32     system       -                 -         -         -
 -
1       10.2.2.0/24          ipsec        10.0.5.11         2         13        172.16.255.11
 lte
1       10.2.3.0/24          ipsec        10.0.5.21         2         15        172.16.255.21
 lte
1       10.20.24.0/24        ge0/4        -                 -         -         -
 -
1       10.20.24.15/32       ge0/4        -                 -         -         -
 -
1       10.20.25.0/24        ipsec        10.1.16.16        2         16        172.16.255.16
 lte
1       56.0.1.0/24          ge0/5        -                 -         -         -
 -
1       56.0.1.15/32         ge0/5        -                 -         -         -
 -
1       60.0.1.0/24          ipsec        10.1.16.16        2         16        172.16.255.16
 lte
1       61.0.1.0/24          ipsec        10.1.16.16        2         16        172.16.255.16
 lte
1       172.16.255.112/32    ipsec        10.0.5.21         2         15        172.16.255.21
 lte
1       172.16.255.112/32    ipsec        10.0.5.11         2         13        172.16.255.11
 lte
1       172.16.255.117/32    ge0/4        10.20.24.17       -         -         -
 -
1       172.16.255.118/32    ipsec        10.1.16.16        2         16        172.16.255.16
 lte
512     10.0.1.0/24          eth0         -                 -         -         -
 -
512     10.0.1.15/32         eth0         -                 -         -         -
 -
```

Examples

The following is a sample output from the **show ip routes** command:

```
vEdge# show ip routes
Codes Proto-sub-type:
  IA -> ospf-inter-area,
  E1 -> ospf-external1, E2 -> ospf-external2,
  N1 -> ospf-nssa-external1, N2 -> ospf-nssa-external2,
  e -> bgp-external, i -> bgp-internal
Codes Status flags:
  F -> fib, S -> selected, I -> inactive,
  B -> blackhole, R -> recursive

                                       PROTOCOL  NEXTHOP     NEXTHOP          NEXTHOP
VPN     PREFIX              PROTOCOL   SUB TYPE  IF NAME     ADDR             VPN      TLOC
 IP           COLOR            ENCAP  STATUS
-------------------------------------------------------------------------------------------
0       10.0.5.0/24         ospf       -         ge0/0       10.1.15.13       -        -
              -                 -      F,S
0       10.0.12.0/24        ospf       -         ge0/0       10.1.15.13       -        -
              -                 -      F,S
```

```
0      10.0.20.0/24        connected  -         ge0/3       -                -        -
             -                 -      F,S
0      10.0.100.0/24       connected  -         ge0/7       -                -        -
             -                 -      F,S
0      10.1.14.0/24        ospf       -         ge0/0       10.1.15.13       -        -
             -                 -      F,S
0      10.1.15.0/24        ospf       -         ge0/0       -                -        -
             -                 -      -
0      10.1.15.0/24        connected  -         ge0/0       -                -        -
             -                 -      F,S
0      10.1.16.0/24        ospf       -         ge0/0       10.1.15.13       -        -
             -                 -      F,S
0      10.1.17.0/24        connected  -         ge0/1       -                -        -
             -                 -      F,S
0      57.0.1.0/24         connected  -         ge0/6       -                -        -
             -                 -      F,S
0      172.16.255.15/32    connected  -         system      -                -        -
             -                 -      F,S
1      10.2.2.0/24         omp        -         -           -                -
172.16.255.11    lte              ipsec  F,S
1      10.2.3.0/24         omp        -         -           -                -
172.16.255.21    lte              ipsec  F,S
1      10.20.24.0/24       ospf       -         ge0/4       -                -        -
             -                 -      -
1      10.20.24.0/24       connected  -         ge0/4       -                -        -
             -                 -      F,S
1      10.20.25.0/24       omp        -         -           -                -
172.16.255.16    lte              ipsec  F,S
1      56.0.1.0/24         connected  -         ge0/5       -                -        -
             -                 -      F,S
1      60.0.1.0/24         omp        -         -           -                -
172.16.255.16    lte              ipsec  F,S
1      61.0.1.0/24         omp        -         -           -                -
172.16.255.16    lte              ipsec  F,S
1      172.16.255.112/32   omp        -         -           -                -
172.16.255.11    lte              ipsec  F,S
1      172.16.255.112/32   omp        -         -           -                -
172.16.255.21    lte              ipsec  F,S
1      172.16.255.117/32   ospf       E2        ge0/4       10.20.24.17      -        -
             -                 -      F,S
1      172.16.255.118/32   omp        -         -           -                -
172.16.255.16    lte              ipsec  F,S
512    10.0.1.0/24         connected  -         eth0        -                -        -
             -                 -      F,S
```

Examples

The following is a sample output from the **show interface** command:

```
vEdge# show interface

                                    IF      IF
                TCP
                                    ADMIN   OPER    ENCAP
SPEED           MSS                  RX       TX
VPN  INTERFACE  IP ADDRESS          STATUS  STATUS  TYPE   PORT TYPE  MTU   HWADDR
MBPS   DUPLEX  ADJUST  UPTIME       PACKETS  PACKET
-------------------------------------------------------------------------------------------
0    ge0/0      10.1.15.15/24      Up      Up      null   transport  1500  00:0c:29:7d:1e:fe
  10     full    0       0:02:38:45  96014    95934
0    ge0/1      10.1.17.15/24      Up      Up      null   service    1500  00:0c:29:7d:1e:08
  10     full    0       0:02:38:45  226      4
0    ge0/2      -                  Down    Up      null   service    1500  00:0c:29:7d:1e:12
  10     full    0       0:02:38:45  226      0
0    ge0/3      10.0.20.15/24      Up      Up      null   service    1500  00:0c:29:7d:1e:1c
```

```
  10     full    0       0:02:38:45  230      4
0    ge0/6      57.0.1.15/24      Up      Up      null   service    1500  00:0c:29:7d:1e:3a
  10     full    0       0:02:38:45  226      4
0    ge0/7      10.0.100.15/24    Up      Up      null   service    1500  00:0c:29:7d:1e:44
  10     full    0       0:02:37:09  906      577
0    system     172.16.255.15/32  Up      Up      null   loopback   1500  00:00:00:00:00:00
  10     full    0       0:02:25:04  0        0
1    ge0/4      10.20.24.15/24    Up      Up      null   service    1500  00:0c:29:7d:1e:26
  10     full    0       0:02:25:22  1152     951
1    ge0/5      56.0.1.15/24      Up      Up      null   service    1500  00:0c:29:7d:1e:30
  10     full    0       0:02:25:22  216      4
512  eth0       10.0.1.15/24      Up      Up      null   service    1500  00:50:56:00:01:0f
  1000   full    0       0:02:38:38  6198     3
```

Examples

The following is a sample output from the **show omp routes** command:

```
vEdge# show omp routes
Code:
C   -> chosen
I   -> installed
Red -> redistributed
Rej -> rejected
L   -> looped
R   -> resolved
S   -> stale
Ext -> extranet
Inv -> invalid
U   -> TLOC unresolved
```

			PATH		ATTRIBUTE	
VPN	PREFIX COLOR	FROM PEER ENCAP	ID PREFERENCE	LABEL	STATUS	TYPE	TLOC IP
1	10.2.2.0/24	172.16.255.19	103	2	C,I,R	installed	172.16.255.11
	lte	ipsec	-				
		172.16.255.20	103	2	C,R	installed	172.16.255.11
	lte	ipsec	-				
1	10.2.3.0/24	172.16.255.19	81	2	C,I,R	installed	172.16.255.21
	lte	ipsec	-				
		172.16.255.20	81	2	C,R	installed	172.16.255.21
	lte	ipsec	-				
1	10.20.24.0/24	0.0.0.0	32769	2	C,Red,R	installed	172.16.255.15
	lte	ipsec	-				
		0.0.0.0	32779	2	C,Red,R	installed	172.16.255.15
	lte	gre	-				
1	10.20.25.0/24	172.16.255.19	77	2	C,I,R	installed	172.16.255.16
	lte	ipsec	-				
		172.16.255.20	73	2	C,R	installed	172.16.255.16
	lte	ipsec	-				
1	56.0.1.0/24	0.0.0.0	32769	2	C,Red,R	installed	172.16.255.15
	lte	ipsec	-				
		0.0.0.0	32779	2	C,Red,R	installed	172.16.255.15
	lte	gre	-				
1	60.0.1.0/24	172.16.255.19	78	2	C,I,R	installed	172.16.255.16
	lte	ipsec	-				
		172.16.255.20	72	2	C,R	installed	172.16.255.16
	lte	ipsec	-				
1	61.0.1.0/24	172.16.255.19	79	2	C,I,R	installed	172.16.255.16
	lte	ipsec	-				
		172.16.255.20	71	2	C,R	installed	172.16.255.16
	lte	ipsec	-				
1	172.16.255.112/32	172.16.255.19	82	2	C,I,R	installed	172.16.255.21

```
lte             ipsec  -
                    172.16.255.19    104    2        C,I,R     installed  172.16.255.11
lte             ipsec  -
                    172.16.255.20    82     2        C,R       installed  172.16.255.21
lte             ipsec  -
                    172.16.255.20    104    2        C,R       installed  172.16.255.11
lte             ipsec  -
```

Operation Commands

ip route

ipv6 route

route-consistency-check

show interface

show ip routes

show ipv6 fib

show omp routes

Related Topics

ip route
ipv6 route
route-consistency-check
show interface, on page 265
show ip routes, on page 303
show ipv6 fib, on page 316
show omp routes, on page 352

show ip mfib oil

show ip mfib oil—Display the list of outgoing interfaces from the Multicast Forwarding Information Base (MFIB) (on vEdge routers only).

show ip mfib oil show ip mfib oil [*group-number*] [*group-address*] [*source-address*] [**mcast-oil-list** *number*]

Syntax Description

None	None: List standard information about outgoing interfaces from the MFIB.
group-number group-address source-address **mcast-oil-list**	Specific Information: List more specific information from the MFIB.

Command History

Release	Modification
14.2	Command introduced.

Output Fields

The output fields are self-explanatory.

Example

```
vEdge# show ip mfib oil

VPN                                OIL         OIL REMOTE
ID   GROUP       SOURCE    INDEX   INTERFACE   SYSTEM
-------------------------------------------------------------
1    224.0.1.39  0.0.0.0
1    224.0.1.40  0.0.0.0
1    225.0.0.1   0.0.0.0   0       -           172.16.255.14
```

Operational Commands

show ip mfib summary

show ip mfib stats

Related Topics

show ip mfib summary, on page 299
show ip mfib stats, on page 298

show ip mfib stats

show ip mfib stats—Display packet transmission and receipt statistics for active entries in the Multicast Forwarding Information Base (MFIB) (on vEdge routers only). Packet rates are computed every 10 seconds.

Command Syntax

show ip mfib stats

Syntax Description

None

Output Fields

Rx Policy Drop, Tx Policy Drop

The number of inbound or outbound packets dropped as the result of applying a policy. The remaining output fields are self-explanatory.

Command History

Release	Modification
14.2	Command introduced.
16.3	Added Rx Policy Drop and Tx Policy Drop fields to command output.

Examples

```
vEdge# show ip mfib stats
```

```
                                                                  RX        RX       TX        TX                                  RX       TX       INVALID
                                RX    RX      TX    TX      CTRL  PACKETS  OCTETS   PACKETS   OCTETS  AVG                RPF      POLICY   POLICY   OIL       TX
VPN   GROUP        SOURCE       PKTS  OCTETS  PKTS  OCTETS  PKTS  (PPS)    (KBPS)   (PPS)     (KBPS)  REPLICATION        FAILURE  DROP     DROP     FAILURE   FAILURE
------------------------------------------------------------------------------------------------------------------------------------------------------------------------
1     224.0.1.39   0.0.0.0      0     0       0     0       0     0        0        0         0        0.00              0        0        0        0         0
1     224.0.1.40   0.0.0.0      0     0       0     0       0     0        0        0         0        0.00              0        0        0        0         0
```

Command History

show ip mfib oil

show ip mfib summary

show multicast topology

Related Topics

show ip mfib oil, on page 297

show ip mfib summary, on page 299

show multicast topology, on page 338

show ip mfib summary

show ip mfib summary—Display a summary of all active entries in the Multicast Forwarding Information Base (MFIB) (on vEdge routers only).

show ip mfib summary show ip mfib summary [*group-number*] [*group-address*] [*source-address*] [**num-service-oils** | **num-tunnel-oils** | **upstream-if** | **upstream-tunnel**]

Syntax Description

None	None: List standard information about outgoing interfaces from the MFIB.
[*group-number* | *group-address* | *source-address*] [**num-service-oils** | **num-tunnel-oils** | **upstream-if** |**upstream-tunnel**]	Specific Information: List more specific information from the MFIB.

Command History

Release	Modification
14.2	Command introduced.

Output Fields

The output fields are self-explanatory.

Example

```
vEdge# show ip mfib summary

 NUM       NUM
VPN                           UPSTREAM  UPSTREAM  SERVICE  TUNNEL
ID   GROUP       SOURCE       IF        TUNNEL    OILS     OILS
---------------------------------------------------------------
1    224.0.1.39  0.0.0.0      ---       0.0.0.0   0        0
```

```
1     224.0.1.40   0.0.0.0   ---        0.0.0.0    0         0
1     225.0.0.1    0.0.0.0   ge0/4      0.0.0.0    0         1
```

Operational Commands

show ip mfib oil

show ip mfib stats

Related Topics

show ip mfib oil, on page 297
show ip mfib stats, on page 298

show ip nat filter

show ip nat filter—Display the NAT translational filters (on vEdge routers only).

show ip nat filter [**nat-vpn** *vpn-id*]

Syntax Description

nat-vpn *vpn-id*	VPN Identifier: Identifier of the VPN that traffic destined for the NAT is coming from.

Command History

Release	Modification
14.2	Command introduced.

Output Fields

The output fields are self-explanatory.

Example

```
VEdge# show ip nat filter nat-vpn
                          PRIVATE     PRIVATE     PRIVATE  PRIVATE  PUBLIC      PUBLIC      PUBLIC  PUBLIC

NAT  NAT                 SOURCE      DEST        SOURCE   DEST     SOURCE      DEST        SOURCE  DEST    FILTER       IDLE
       OUTBOUND  OUTBOUND  INBOUND   INBOUND
VPN  IFNAME  VPN  PROTOCOL  ADDRESS     ADDRESS     PORT     PORT     ADDRESS     ADDRESS     PORT    PORT    STATE
TIMEOUT     PACKETS   OCTETS    PACKETS  OCTETS
-------------------------------------------------------------------------------------------------------------------------------
0    ge0/0   0    icmp      10.1.15.15  10.1.14.14  4697     4697     10.1.15.15  10.1.14.14  64931   64931   established
0:00:00:41  1         98        1         98
0    ge0/0   0    icmp      10.1.15.15  10.1.14.14  14169    14169    10.1.15.15  10.1.14.14  28467   28467   established
0:00:00:44  1         98        1         98
0    ge0/0   0    icmp      10.1.15.15  10.1.14.14  21337    21337    10.1.15.15  10.1.14.14  44555   44555   established
0:00:00:47  1         98        1         98
0    ge0/0   0    icmp      10.1.15.15  10.1.14.14  28505    28505    10.1.15.15  10.1.14.14  40269   40269   established
0:00:00:50  1         98        1         98
0    ge0/0   0    icmp      10.1.15.15  10.1.14.14  39513    39513    10.1.15.15  10.1.14.14  31859   31859   established
0:00:00:53  1         98        1         98
0    ge0/0   0    icmp      10.1.15.15  10.1.14.14  46681    46681    10.1.15.15  10.1.14.14  1103    1103    established
0:00:00:56  1         98        1         98
0    ge0/0   0    icmp      10.1.15.15  10.1.14.14  57176    57176    10.1.15.15  10.1.14.14  38730   38730   established
0:00:00:35  1         98        1         98
```

```
0    ge0/0   0    icmp      10.1.15.15  10.1.14.14  64600    64600    10.1.15.15  10.1.14.14  33274   33274   established
0:00:00:38  1         98        1         98
0    ge0/0   0    udp       10.1.15.15  10.0.5.19   12346    12346    10.1.15.15  10.0.5.19   64236   12346   established
0:00:19:59  38        8031      23        5551
0    ge0/0   0    udp       10.1.15.15  10.0.12.20  12346    12346    10.1.15.15  10.0.12.20  64236   12346   established
0:00:19:59  36        7470      23        5551
0    ge0/0   0    udp       10.1.15.15  10.0.12.22  12346    12346    10.1.15.15  10.0.12.22  64236   12346   established
0:00:19:59  679       598771    434       92925
0    ge0/0   0    udp       10.1.15.15  10.1.14.14  12346    12346    10.1.15.15  10.1.14.14  64236   12346   established
0:00:19:59  34        3825      9         3607
0    ge0/0   0    udp       10.1.15.15  10.1.14.14  12346    12350    10.1.15.15  10.1.14.14  64236   12350   established
0:00:19:59  38        5472      23        3634
0    ge0/0   0    udp       10.1.15.15  10.1.16.16  12346    12346    10.1.15.15  10.1.16.16  64236   12346   established
0:00:19:59  38        5472      23        3634
```

Operational Commands

show ip nat interface

show ip nat interface-statistics

Related Topics

nat
show ip nat interface, on page 301
show ip nat interface-statistics, on page 302

show ip nat interface

show ip nat interface—List the interfaces on which NAT is enabled and the NAT translational filters on those interfaces (on vEdge routers only).

Command Syntax

show ip nat interface [**nat-vpn** *vpn-id*] [*nat-parameter*]

Syntax Description

None	List information about all NAT interfaces in all VPNs.

Table 4: Syntax Description

nat-parameter	Specific NAT Interface Parameter: List specific NAT interface information. *nat-parameter* can be one of the following, which correspond to the column heads in the command output: **fib-filter-count**, **filter-count**, **filter-type**, **ip**, **mapping-type**, and **number-ip-pools**.
nat-vpn *vpn-id*	Specific VPN: List information for NAT interface only for the specified VPN.

Command History

Release	Modification
14.2.	Command introduced.

Output Fields

In the Map Type field, all SD-WAN NAT types are endpoint-independent.

The other output fields are self-explanatory.

Output

```
vEdge# show ip nat interface
                                                                                FIB                     NUMBER

                                                                          FILTER  FILTER                  IP
VPN  IFNAME     MAP TYPE              FILTER TYPE                         COUNT   COUNT   IP              POOLS
-------------------------------------------------------------------------------------------------------------
1    natpool1   endpoint-independent  address-port-restricted  0       0       10.15.1.4/30    4
1    natpool7   endpoint-independent  address-port-restricted  0       0       10.21.26.15/32  1
1    natpool8   endpoint-independent  address-port-restricted  0       0       10.21.27.15/32  1
1    natpool9   endpoint-independent  address-port-restricted  0       0       10.21.28.15/32  1
1    natpool10  endpoint-independent  address-port-restricted  0       0       10.21.29.15/32  1
1    natpool11  endpoint-independent  address-port-restricted  0       0       10.21.30.15/32  1
1    natpool12  endpoint-independent  address-port-restricted  0       0       10.21.31.15/32  1
1    natpool13  endpoint-independent  address-port-restricted  0       0       10.21.32.15/32  1
1    natpool14  endpoint-independent  address-port-restricted  0       0       10.21.33.15/32  1
1    natpool15  endpoint-independent  address-port-restricted  0       0       10.21.34.15/32  1
1    natpool16  endpoint-independent  address-port-restricted  0       0       10.21.35.15/32  1
```

Operational Commands

nat

show ip nat filter

show ip nat interface-statistics

Related Topics

nat
show ip nat filter, on page 300
show ip nat interface-statistics, on page 302

show ip nat interface-statistics

show ip nat interface-statistics—List packet, NAT, and ICMP statistics for the interfaces on which NAT is enabled (on vEdge routers only).

Command Syntax

show ip nat filter interface-statistics [**nat-vpn** *vpn-id*]

Syntax Description

Table 5: Syntax Description

None	Display statistics for all interfaces in all VPNs.
nat-vpn *vpn-id*	VPN: Display statistics for the interfaces in the specified VPN.

Command History

Release	Modification
14.2.	Command introduced.

```
vEdge# show ip nat interface-statistics
                                                  NAT   NAT     NAT     NAT                                 INBOUND
                        NAT     NAT     NAT
              NAT       NAT       NAT     NAT     MAP   FILTER  FILTER  STATE  NAT      OUTBOUND  INBOUND  ICMP
NAT         NAT         MAP     MAP     FILTER    NAT MAP
              OUTBOUND  INBOUND  ENCODE  DECODE  ADD   ADD     LOOKUP  CHECK  POLICER  ICMP      ICMP     ERROR    NAT
FRAGMENTS  UNSUPPORTED NO      CANNOT  MAP       IP POOL
VPN  IFNAME  PACKETS   PACKETS  FAIL    FAIL    FAIL  FAIL    FAIL    FAIL   DROPS    ERROR     ERROR    DROPS    FRAGMENTS
FAIL        PROTO      PORTS  XLATE   MISMATCH  EXHAUSTED
-------------------------------------------------------------------------------------------------------------------------
1    ge0/4   0          0        0       0       0     0       0       0      0        0         0        0        0
0           0          0      0       0         0
1    ge0/5   0          0        0       0       0     0       0       0      0        0         0        0        0
0           0          0      0       0         0

vEdge# show ip nat interface-statistics | notab
ip nat interface-statistics nat-vpn 1 nat-ifname natpool1
 nat-outbound-packets      0
 nat-inbound-packets       0
 nat-encode-fail           0
 nat-decode-fail           0
 nat-map-add-fail          0
 nat-filter-add-fail       0
 nat-filter-lookup-fail    0
 nat-state-check-fail      0
 nat-policer-drops         0
 outbound-icmp-error       0
 inbound-icmp-error        0
 inbound-icmp-error-drops  0
 nat-fragments             0
 nat-fragments-fail        0
 nat-unsupported-proto     0
 nat-map-no-ports          0
 nat-map-cannot-xlate      0
 nat-filter-map-mismatch   0
 nat-map-ip-pool-exhausted 0
...
```

Operational Commands

nat

show ip nat filter

show ip nat interface-statistics

Related Topics

nat

show ip nat filter, on page 300

show ip nat interface, on page 301

show ip routes

To display the IPv4 entries in the local route table, use the **show ip routes** command in privileged EXEC mode. On Cisco vSmart controllers, the route table incorporates forwarding information.

show ip routes [**vpn** *vpn-id*] [*ipv4-address*] [*ipv4prefix/length*] [**bgp**] [**connected**] [**gre**] [**nat**] [**natpool-inside**] [**natpool-outside**] [**omp**] [**ospf**] [**static**] [**summary** [**protocol** *protocol*]] [**detail**]

Syntax Description

	None: List standard information about the entries in the local IPv4 route table.
detail	Detailed Information: List detailed information about the entries in the local IPv4 route table.
ipv4-address *ipv4prefix /length* **vpn** *vpn-id*	IP Address or Route Prefix: List route information for the specified route prefix. If you omit the prefix length, you must specify a VPN identifier so that the Cisco SD-WAN software can find the route that best matches the prefix.
nat	NAT Routes: List routes learned from static routes that are advertised to a different VPN (configured using the **ip route vpn** command).
natpool-inside **natpool-outside**	NAT Pool Routes: List routes learned from NAT pools that are advertised by OMP (*natpool-inside*) and routes learned from the service side (*natpool-outside*) for Cisco vEdge devices acting as NATs.
protocol	Routes Learned from a Protocol or Connected Networks: List routes learned from one or more specific protocols—bgp, connected, gre, omp, ospf, and static. The protocol static includes both routes that are statically configured on the local device as well as routes learned from a DHCP server if one or more interfaces in VPN 0 are configured to learn their IP addresses via DHCP.
summary [**summary** *protocol]*	Summary of Routes: List summary information about the IP routes in the route table or about routes learned from the specified protocol. Protocol can be bgp, connected, omp, ospf, or static.
vpn *vpn-id*	VPN-Specific Routes: List only the route table entries for the specified VPN.

Note Any BFD event (up/down) for a vEdge peer will result in withdrawal and re-installation of all OMP routes learnt from the remote vEdge, consequently, re-setting the uptime as well.

Command History

Release	Modification
14.1	Command introduced.
16.3	Added support for displaying NAT-related routes.
17.1	Display omp-tag and ospf-tag fields in detailed output.
17.2	Renamed natpool-omp and natpool-service options to natpool-inside and natpool-outside.
Cisco SD-WAN Release 20.9.1	This command was modified. Support was added to display interservice VPN route replication in detailed output.

Examples

The following is a sample output from the **show ip route vpn** command:

```
vEdge# show ip route vpn 102
Codes Proto-sub-type:
  IA -> ospf-intra-area, IE -> ospf-inter-area,
  E1 -> ospf-external1, E2 -> ospf-external2,
  N1 -> ospf-nssa-external1, N2 -> ospf-nssa-external2,
  e -> bgp-external, i -> bgp-internal
Codes Status flags:
  F -> fib, S -> selected, I -> inactive,
  B -> blackhole, R -> recursive, L -> import

                                                PROTOCOL  NEXTHOP     NEXTHOP   NEXTHOP
VPN    PREFIX              PROTOCOL             SUB TYPE  IF NAME     ADDR      VPN      TLOC
IP  COLOR   ENCAP  STATUS
-------------------------------------------------------------------------------------------------
102    10.0.100.0/24       static               -         -           -         101      -
    -       -      F,S,L
102    10.10.25.44/32      static               -         -           -         101      -
    -       -      F,S,L
102    10.10.25.45/32      static               -         -           -         101      -
    -       -      F,S,L
102    192.168.25.0/24     connected            -         ge0/4.102   -         -        -
    -       -      F,S
```

The following is a sample output from the **show ip routes** command:

```
vEdge# show ip routes
Codes Proto-sub-type:
  IA -> ospf-inter-area,
  E1 -> ospf-external1, E2 -> ospf-external2,
  N1 -> ospf-nssa-external1, N2 -> ospf-nssa-external2,
  e -> bgp-external, i -> bgp-internal
Codes Status flags:
  F -> fib, S -> selected, I -> inactive,
  B -> blackhole, R -> recursive
                                      PROTOCOL  NEXTHOP  NEXTHOP          NEXTHOP
VPN  PREFIX              PROTOCOL     SUB TYPE  IF NAME  ADDR            VPN      TLOC IP
       COLOR             ENCAP  STATUS
-------------------------------------------------------------------------------------------------
0    0.0.0.0/0          static     -         ge0/0    10.1.15.13       -        -
       -                -      F,S
0    10.0.20.0/24        connected  -         ge0/3    -                -        -
       -                -      F,S
0    10.0.100.0/24       connected  -         ge0/7    -                -        -
       -                -      F,S
0    10.1.15.0/24        connected  -         ge0/0    -                -        -
       -                -      F,S
0    10.1.17.0/24        connected  -         ge0/1    -                -        -
       -                -      F,S
0    10.57.1.0/24        connected  -         ge0/6    -                -        -
       -                -      F,S
0    172.16.255.15/32    connected  -         system   -                -        -
       -                -      F,S
1    10.1.17.15/32       nat        -         ge0/1    -                0        -
       -                -      F,S
1    10.20.24.0/24       ospf       -         ge0/4    -                -        -
       -                -      -
1    10.20.24.0/24       connected  -         ge0/4    -                -        -
       -                -      F,S
1    10.20.25.0/24       omp        -         -        -                -        172.16.255.16
```

```
    lte              ipsec  F,S
1    10.56.1.0/24        connected  -         ge0/5    -               -        -
       -                 -      F,S
1    10.60.1.0/24        omp        -         -        -               -        172.16.255.16
    lte              ipsec  F,S
1    10.61.1.0/24        omp        -         -        -               -        172.16.255.16
    lte              ipsec  F,S
512  10.0.1.0/24         connected  -         eth0     -               -        -
       -                 -      F,S
```

The following is a sample output from the **show ip routes summary** command:

```
vEdge# show ip routes summary

     ADDRESS
VPN  FAMILY   PROTOCOL   RECEIVED  INSTALLED
-----------------------------------------------
0    ipv4     connected  6         6
0    ipv4     static     0         0
0    ipv4     ospf       5         4
0    ipv4     bgp        0         0
0    ipv4     omp        0         0
1    ipv4     connected  3         3
1    ipv4     static     0         0
1    ipv4     ospf       0         0
1    ipv4     bgp        1         1
1    ipv4     omp        4         4
512  ipv4     connected  1         1
512  ipv4     static     0         0
```

The following is a sample output from the **show ip routes detail** command:

```
vEdge# show ip routes 172.16.255.112/32 detail
Codes Proto-sub-type:
IA -> ospf-inter-area,
E1 -> ospf-external1, E2 -> ospf-external2,
N1 -> ospf-nssa-external1, N2 -> ospf-nssa-external2,
e -> bgp-external, i -> bgp-internal
Codes Status flags:
F -> fib, S -> selected, I -> inactive,
B -> blackhole, R -> recursive

-----------------------------------------
VPN 1 PREFIX 172.16.255.112/32
-----------------------------------------
proto ospf
proto-sub-type E2
distance 110
metric 20
uptime 2:17:37:59
omp-tag 100
ospf-tag 20
nexthop-ifname ge0/0
nexthop-addr 10.2.2.12
status F,S
```

Related Topics

ip route
route-consistency-check
show ip fib, on page 292

show ipv6 routes, on page 323
show omp routes, on page 352

show ipsec ike inbound-connections

show ipsec ike inbound-connections—Display information about the IKE sessions that remote IKE peers have established to the local router (on vEdge routers only).

Command Syntax

show ipsec ike inbound-connections

show ipsec ike inbound-connections *source-ip-address* [*source-port* [*destination-ip-address* [*destination-port*]]] [(**ciphersuite** *suite* | **new-key-hash** *hash* | **new-spi** *spi* | **old-key-hash** *hash* | **old-spi** *spi*)]]]]

Syntax Description

	None: Display information for all the IKE sessions that have been established to the local router.
source-ip-address [*source-port*[*destination-ip-address*[*destination-port*]]] [(**ciphersuite** *suite* | **new-key-hash** *hash* |**new-spi** *spi* |**old-key-hash** *hash* | **old-spi** *spi*)]]]]	Specific IKE-Enabled IPsec Tunnel Connection: Display information for a specific IKE-enabled IPsec tunnel.

Command History

Release	Modification
17.2	Command introduced.

Example

For the following example, the output of the **show ipsec ike inbound-connections** command on the vEdge1 router shows the IKE-enabled IPsec tunnel connection that originates on the vEdge2 router, whose tunnel source IP address is 10.1.16.16. The command output on the vEdge2 router shows the connection from vEdge1, whose tunnel source IP address is 10.1.15.15.

```
vEdge1# show running-config vpn 1 interface ipsec1
vpn 1
 interface ipsec1
  ip address 10.1.1.1/30
  tunnel-source      10.1.15.15
  tunnel-destination 10.1.16.16
  ike
   version      2
   rekey        14400
   cipher-suite aes256-cbc-sha1
   group        16
   authentication-type
    pre-shared-key
     pre-shared-secret $8$jr37xShEUPZF2zuiZFpTqqBHSlCHVX1XLut1o62mh7c=
    !
   !
  !
  ipsec
```

```
   rekey         14400
   replay-window 32
   cipher-suite  aes256-cbc-sha1
  !
  no shutdown
 !
!

vEdge2# show running-config vpn 1 interface ipsec1
vpn 1
 interface ipsec1
  ip address 10.1.1.2/30
  tunnel-source      10.1.16.16
  tunnel-destination 10.1.15.15
  ike
   version      2
   rekey        14400
   cipher-suite aes256-cbc-sha1
   group        16
   authentication-type
    pre-shared-key
     pre-shared-secret $8$/O+yus2zpknCbyK5YUfZMQehghSsXCXzfRpc9bj6YsY=
    !
   !
  !
  ipsec
   rekey         14400
   replay-window 32
   cipher-suite  aes256-cbc-sha1
  !
  no shutdown
 !
!

vEdge1# show ipsec ike inbound-connections

SOURCE                                SOURCE  DEST                                DEST    NEW     OLD     CIPHER           NEW       OLD
IP                                    PORT    IP                                  PORT    SPI     SPI     SUITE            KEY HASH  KEY HASH
-------------------------------------------------------------------------------------------------------------------------------------------
10.1.16.16                            4500    10.1.15.15                          4500    257     256     aes256-cbc-sha1  ****01be  ****a0df

vEdge2# show ipsec ike inbound-connections

SOURCE                                SOURCE  DEST                                DEST    NEW     OLD     CIPHER           NEW       OLD
IP                                    PORT    IP                                  PORT    SPI     SPI     SUITE            KEY HASH  KEY HASH
-------------------------------------------------------------------------------------------------------------------------------------------
10.1.15.15                            4500    10.1.16.16                          4500    257     256     aes256-cbc-sha1  ****4485  ****48e3
```

Related Topics

show ipsec ike outbound-connections, on page 308
show ipsec ike sessions, on page 310

show ipsec ike outbound-connections

show ipsec ike outbound-connections—Display information about the IKE sessions that the local router has established to remote IKE peers (on vEdge routers only).

Command Syntax

show ipsec ike outbound-connections

show ipsec ike outbound-connections *source-ip-address* [*source-port* [*destination-ip-address* [*destination-port*] [*spi*]]] [(**ciphersuite** *suite* | **key-hash** *hash* | **tunnel-mtu** *mtu*)]]]]

Syntax Description

	None: Display information for all the IKE sessions that have been established to remote IKE peers.
source-ip-address [*source-port* [*destination-ip-address*] [*destination-port*] [*spi*]]] [(**ciphersuite** *suite* |**tunnel-mtu** *mtu*)]]]]	Specific IKE-Enabled IPsec Tunnel Connection: Display information for a specific IKE-enabled IPsec tunnel.

Command History

Release	Modification
17.2	Command introduced.

Examples

On the vEdge1 router, the output of the **show ipsec ike outbound-connections** command shows the IKE-enabled IPsec tunnel connection that originates from the local router, whose tunnel source IP address is 10.1.15.15. The command output on the vEdge2 router shows the connection originating from that router, 10.1.15.15.

```
vEdge1# show running-config vpn 1 interface ipsec1
vpn 1
 interface ipsec1
  ip address 10.1.1.1/30
  tunnel-source      10.1.15.15
  tunnel-destination 10.1.16.16
  ike
   version      2
   rekey        14400
   cipher-suite aes256-cbc-sha1
   group        16
   authentication-type
    pre-shared-key
     pre-shared-secret $8$jr37xShEUPZF2zuiZFpTqqBHSlCHVX1XLut1o62mh7c=
    !
   !
  !
  ipsec
   rekey         14400
   replay-window 32
   cipher-suite  aes256-cbc-sha1
  !
  no shutdown
 !
!

vEdge2# show running-config vpn 1 interface ipsec1
vpn 1
 interface ipsec1
  ip address 10.1.1.2/30
  tunnel-source      10.1.16.16
  tunnel-destination 10.1.15.15
  ike
   version      2
   rekey        14400
   cipher-suite aes256-cbc-sha1
   group        16
   authentication-type
    pre-shared-key
     pre-shared-secret $8$/O+yus2zpknCbyK5YUfZMQehghSsXCXzfRpc9bj6YsY=
    !
   !
  !
  ipsec
   rekey         14400
   replay-window 32
   cipher-suite  aes256-cbc-sha1
```

```
  !
  no shutdown
 !
!

vEdge1# show ipsec ike outbound-connections

SOURCE                              SOURCE  DEST                              DEST            CIPHER
IP                                  PORT    IP                                PORT    SPI     SUITE            KEY HASH  TUNNEL MTU
-------------------------------------------------------------------------------------------------------------------------------------
10.1.15.15                          4500    10.1.16.16                        4500    257     aes256-cbc-sha1  ****55b5  1418

vEdge2# show ipsec ike outbound-connections

SOURCE                              SOURCE  DEST                              DEST            CIPHER
IP                                  PORT    IP                                PORT    SPI     SUITE            KEY HASH  TUNNEL MTU
-------------------------------------------------------------------------------------------------------------------------------------
10.1.16.16                          4500    10.1.15.15                        4500    257     aes256-cbc-sha1  ****cf49  1418
```

Related Topics

show ipsec ike inbound-connections, on page 307
show ipsec ike sessions, on page 310

show ipsec ike sessions

show ipsec ike sessions—Display information about the IKE sessions on the router (on vEdge routers only).

Command Syntax

show ipsec ike sessions

Syntax Description

None

Command History

Release	Modification
17.2	Command introduced.

Examples

```
vEdge1# show running-config vpn 1 interface ipsec1
vpn 1
 interface ipsec1
  ip address 10.1.1.1/30
  tunnel-source      10.1.15.15
  tunnel-destination 10.1.16.16
  ike
   version      2
   rekey        14400
   cipher-suite aes256-cbc-sha1
   group        16
   authentication-type
    pre-shared-key
     pre-shared-secret $8$jr37xShEUPZF2zuiZFpTqqBHSlCHVX1XLut1o62mh7c=
    !
   !
  !
  ipsec
   rekey         14400
   replay-window 32
   cipher-suite  aes256-cbc-sha1
  !
  no shutdown
 !
!
```

```
vEdge2# show running-config vpn 1 interface ipsec1
vpn 1
 interface ipsec1
  ip address 10.1.1.2/30
  tunnel-source      10.1.16.16
  tunnel-destination 10.1.15.15
  ike
   version      2
   rekey        14400
   cipher-suite aes256-cbc-sha1
   group        16
   authentication-type
    pre-shared-key
     pre-shared-secret $8$/O+yus2zpknCbyK5YUfZMQehghSsXCXzfRpc9bj6YsY=
    !
   !
  !
  ipsec
   rekey         14400
   replay-window 32
   cipher-suite  aes256-cbc-sha1
  !
  no shutdown
 !
!

vEdge1# show ipsec ike sessions

     IF                           SOURCE              DEST

VPN  NAME    VERSION  SOURCE IP   PORT    DEST IP     PORT  INITIATOR SPI     RESPONDER SPI     CIPHER SUITE     DH GROUP        STATE        UPTIME

-------------------------------------------------------------------------------------------------------------------------------------------------------------
1    ipsec1  2        10.1.15.15  4500    10.1.16.16  4500  ccb1a7c4a770752e  6179faf6884bfd38  aes256-cbc-sha1  16 (MODP-4096)  ESTABLISHED
0:00:08:38

vEdge2# show ipsec ike sessions

     IF                           SOURCE              DEST

VPN  NAME    VERSION  SOURCE IP   PORT    DEST IP     PORT  INITIATOR SPI     RESPONDER SPI     CIPHER SUITE     DH GROUP        STATE        UPTIME

-------------------------------------------------------------------------------------------------------------------------------------------------------------
1    ipsec1  2        10.1.16.16  4500    10.1.15.15  4500  ccb1a7c4a770752e  6179faf6884bfd38  aes256-cbc-sha1  16 (MODP-4096)  ESTABLISHED
0:00:09:23
```

Related Topics

show ipsec ike inbound-connections, on page 307
show ipsec ike outbound-connections, on page 308

show ipsec inbound-connections

show ipsec inbound-connections—Display information about IPsec tunnels that originate on remote routers (on vEdge routers only).

Command Syntax

show ipsec inbound-connections

show ipsec inbound-connections *local-tloc-address* [*local-color* [*remote-tloc-address* [*remote-color* [(**dest-ip** |**dest-port** | **source-ip** | **source-port**)]]]]

Syntax Description

	None: Display information for all the IPsec connections that originate on the vEdge router. The tunnel connections are listed in order according to the local TLOC address.

local-tloc-address [*local-color* [*remote-tloc-address*[*remote-color* [(**dest-ip** |**dest-port** |**source-ip** |**source-port**)]]]]	Specific Tunnel Connection: Display information for a specific IPsec connection.

Command History

Release	Modification
14.1	Command introduced.
15.2	Command renamed from **show tunnel inbound-connections**.
16.2	Display negotiated encryption algorithm in command output.

Examples

```
vEdge# show ipsec inbound-connections

SOURCE                          SOURCE  DEST                          DEST    REMOTE           REMOTE           LOCAL            LOCAL
  NEGOTIATED
IP                              PORT    IP                            PORT    TLOC ADDRESS     TLOC COLOR       TLOC ADDRESS     TLOC COLOR
  ENCRYPTION ALGORITHM  TC SPIs
-------------------------------------------------------------------------------------------------------------------------------------------
10.0.5.11                       12406   10.1.15.15                    12406   172.16.255.11    lte              172.16.255.15    lte
  AES-GCM-256           8
10.1.14.14                      12406   10.1.15.15                    12406   172.16.255.14    lte              172.16.255.15    lte
  AES-GCM-256           8
10.1.16.16                      12406   10.1.15.15                    12406   172.16.255.16    lte              172.16.255.15    lte
  AES-GCM-256           8
10.0.5.21                       12406   10.1.15.15                    12406   172.16.255.21    lte              172.16.255.15    lte
  AES-GCM-256           8
```

Related Topics

show ipsec local-sa, on page 312
show ipsec outbound-connections, on page 313

show ipsec local-sa

show ipsec local-sa—Display security association information for the IPsec tunnels that have been created for local TLOCs (on vEdge routers only).

Command Syntax

show ipsec local-sa

show ipsec local-sa *tloc-address* [*color* [**spi** [(**auth-key-hash** |**encrypt-key-hash** | **ip** |**port**)]]]]

Syntax Description

	None: Display information for the security associations for all IPsec tunnels that originate on the local router. The SA information is listed in order according to the local TLOC address.

tloc-address [*color* [(**spi** [(**auth-key-hash** | [**encrypt-key-hash** |**ip** |**port**)]]]]	Specific SA: Display information for a specific security association.

Command History

Release	Modification
14.1	Command introduced.
15.2	Command renamed from **show tunnel local-sa**.
16.3	Add display for IPv6 source IP addresses.

Examples

```
vEdge# show ipsec local-sa
                                    SOURCE          SOURCE                          SOURCE

TLOC ADDRESS     TLOC COLOR       SPI     IPv4            IPv6                            PORT    KEY HASH

-------------------------------------------------------------------------------------------------------------------
172.16.255.11    lte              256     10.0.5.11       ::                              12366   *****cfdc

172.16.255.11    lte              257     10.0.5.11       ::                              12366   *****cfdc
```

Related Topics

rekey
request security ipsec-rekey, on page 141
show ipsec inbound-connections, on page 311
show ipsec outbound-connections, on page 313

show ipsec outbound-connections

show ipsec outbound-connections—Display information about the IPsec connections to remote routers (on Cisco vEdge devices only).

Command Syntax

show ipsec outbound-connections [*source-ip-address*]

show ipsec outbound-connections [**authentication-used** *string* |**tunnel-mtu** *number*]

show ipsec outbound-connections (**remote-tloc-address** *ip-address* | **remote-tloc-color** *color*)

Syntax Description

	None: Display information for all the IPsec connections that originate on the local Cisco vEdge device.
authentication-used *string*	Authentication Type: Display information for the IPsec connections that use the specified authentication.

remote-tloc-address *ip-address*	TLOC Address: Display the IPsec connection information for a specific TLOC address.
remote-tloc-color *color*	TLOC Color: Display the IPsec connection information for a specific TLOC color.
tunnel-mtu *number*	Tunnel MTU Size: Display information for the IPsec connections with the specified MTU size.

Command History

Release	Modification
14.1	Command introduced.
15.2	Command renamed from **show tunnel outbound-connections**.
16.2	Display negotiated encryption algorithm in command output.
Cisco SD-WAN Release 20.6.1	The output of this command was modified. Starting from Cisco SD-WAN Release 20.6.1, the command output replaces the `Authentication Used` column with the `Integrity Used` column. The values `null`, `ah-sha1-hmac`, `ah-no-id`, and `sha1-hmac` are replaced with `none`, `ip-udp-esp`, `ip-udp-esp-no-id`, and `esp` respectively.

Examples

The following is a sample output of the **show ipsec outbound-connections** for Cisco SD-WAN Release 20.6.1 and later.

```
Device# show sdwan ipsec outbound-connections
SOURCE    SOURCE  DEST             DEST                          REMOTE            REMOTE
   INTEGRITY                     NEGOTIATED
IP                PORT    IP               PORT    SPI     TUNNEL MTU  TLOC ADDRESS     TLOC
 COLOR    USED             KEY HASH   ENCRYPTION ALGORITHM  TC SPIs   PEER      PEER SPI

                                                                        KEY-HASH

-------------------------------------------------------------------------------------------------------------
10.1.15.15        12366   10.0.5.11       12367   268     1442        172.16.255.11    lte
           ip-udp-esp       *****26f0  AES-GCM-256           8        NONE        0
10.1.15.15        12366   10.0.5.21       12377   268     1442        172.16.255.21    lte
           ip-udp-esp       *****4961  AES-GCM-256           8        NONE        0
10.1.15.15        12366   10.1.14.14      12366   268     1442        172.16.255.14    lte
           ip-udp-esp       *****7c97  AES-GCM-256           8        NONE        0
10.1.15.15        12366   10.1.16.16      12366   268     1442        172.16.255.16    lte
           ip-udp-esp       *****072e  AES-GCM-256           8        NONE        0
```

The following is a sample output of the **show ipsec outbound-connections** command for releases before Cisco SD-WAN Release 20.6.1.

```
Device# show ipsec outbound-connections
SOURCE                        SOURCE  DEST                          DEST                      REMOTE
REMOTE          AUTHENTICATION           NEGOTIATED
```

```
IP                                PORT    IP                                PORT    SPI     TUNNEL MTU  TLOC ADDRESS     TLOC
 COLOR       USED             KEY HASH   ENCRYPTION ALGORITHM  TC SPIs
-------------------------------------------------------------------------------------------------------------------------
10.1.15.15                       12406   10.0.5.11                         12406   262     1413        172.16.255.11    lte
             AH_SHA1_HMAC    *****f5a8  AES-GCM-256           8
10.1.15.15                       12406   10.0.5.21                         12406   261     1413        172.16.255.21    lte
             AH_SHA1_HMAC    *****afe6  AES-GCM-256           8
10.1.15.15                       12406   10.1.14.14                        12406   262     1413        172.16.255.14    lte
             AH_SHA1_HMAC    *****c4cc  AES-GCM-256           8
10.1.15.15                       12406   10.1.16.16                        12406   262     1413        172.16.255.16    lte
             AH_SHA1_HMAC    *****a3dd  AES-GCM-256           8
```

Related Topics

rekey

show ipsec inbound-connections, on page 311
show ipsec local-sa, on page 312

show ipv6 dhcp interface

show ipv6 dhcp interface—Display information about interfaces that are DHCPv6 clients (on Cisco vEdge devices and Cisco Catalyst SD-WAN Controllersonly).

Command Syntax

show ipv6 dhcp interface [**vpn** *vpn-id*] [*interface-name*]

show ipv dhcp interface [**dns-list**] [**state**]

Syntax Description

	None: Display information about all interfaces that are DHCPv6 clients.
dns-list	DNS Servers: Display the DHCPv6 client DNS information.
state	Lease State: Display the DHCPv6 client interface state information.
vpn *vpn-id*	VPN: Display DHCPv6 client interface information for a specific VPN.

Output Fields

The state can be one of **bound**, **init**, **rebind**, **release**, **renew**, and **request**.

The DNS column lists the IPv6 addresses of the DNS servers returned by DHCPv6.

The remaining output fields are self-explanatory.

Command History

Release	Modification
16.3	Command introduced.

Examples

```
vEdge# show ipv6 dhcp interface

                                                                                                    TIME
VPN  INTERFACE  STATE  ACQUIRED IP       SERVER                                  LEASE TIME  REMAINING
GATEWAY  INDEX  DNS
-------------------------------------------------------------------------------------------------------------------
0    ge0/1      init   -                                                        -           -           -
0    ge0/2      bound  2001::a00:55e/64  0:1:0:1:1f:80:20:ef:0:c:29:6:79:94  0:02:00:00  0:01:58:08  -
       0      fec0::1

       1      fec0::2

       2      fec0::3
```

Related Topics

ipv6 dhcp-client
show dhcp interface, on page 244
show ipv6 interface, on page 317

show ipv6 fib

show ipv6 fib—Display the IPv6 entries in the local forwarding table (on Cisco vEdge devices only).

Command Syntax

show ipv6 fib [**vpn** *vpn-id*]

show ipv6 fib [**vpn** *vpn-id*] [**tloc**color *color* | **tloc-ip** *ip-address*]

show ipv6 fib vpn *vpn-id* [*ipv4-prefix*/*length*]

Syntax Description

	None: List standard information about the IPv6 entries in the forwarding table.
ipv4-prefix/length	Specific Prefix: List the forwarding table entry for the specified IPv6 prefix.
tloc [**color** *color* | **tloc-ip** *ip-address*]	TLOC-Specific Entries: Display forwarding table IPv6 entries for specific TLOCs.
vpn *vpn-id*	VPN-Specific Routes List only the forwarding table IPv4 entries for the specified VPN.

Output Fields

The output fields are self-explanatory.

Command History

Release	Modification
16.3	Command introduced.

Example

```
vEdge# show ipv6 fib
                                                NEXTHOP     NEXTHOP          NEXTHOP  SA
VPN  PREFIX                                     IF NAME     ADDR             LABEL    INDEX    TLOC IP          COLOR
-------------------------------------------------------------------------------------------------------------------------
0    ::/0                                       ge0/2       2001::100:50d    -        -        -                -
0    ::/0                                       ge0/1       2001::100:1a17   -        -        -                -
0    2001::a00:500/120                          ge0/2       -                -        -        -                -

0    2001::a00:50b/120                          ge0/2       -                -        -        -                -
0    2001::a00:1a00/120                         ge0/1       -                -        -        -                -
0    2001::a00:1a0b/128                         ge0/1       -                -        -        -                -
0    2001::a00:6510/128                        loopback1    -                -        -        -                -
0    2001::a00:6502/128                        loopback2    -                -        -        -                -
0    2001::a00:6503/128                        loopback3    -                -        -        -                -
0    2001::a00:7504/128                        loopback4    -                -        -        -                -
0    fe80::20c:29ff:feab:b762/128               ge0/1       -                -        -        -                -

0    fe80::20c:29ff:feab:b76c/128               ge0/2       -                -        -        -                -

0    fe80::20c:29ff:feab:b776/128               ge0/3       -                -        -        -                -

0    fe80::20c:29ff:feab:b780/128               ge0/4       -                -        -        -                -

0    fe80::20c:29ff:feab:b78a/128               ge0/5       -                -        -        -                -

0    fe80::20c:29ff:feab:b794/128               ge0/6       -                -        -        -                -

0    fe80::20c:29ff:feab:b79e/128               ge0/7       -                -        -        -                -
```

Related Topics

show ipv6 interface, on page 317
show ipv6 routes, on page 323
show ip fib, on page 292
show omp routes, on page 352

show ipv6 interface

show ipv6 interface—Display information about IPv6 interfaces on a Cisco SD-WAN device.

Command Syntax

show ipv6 interface [**detail**] [*interface-name*] [**vpn** *vpn-id*]

Syntax Description

	None: Display standard information about the interfaces on the Cisco SD-WAN device.

detail	Detailed Interface Information: Display detailed information about the interfaces (available only on Cisco vEdge devices).
interface-name	Specific Interface: Display information about a specific interface. On Cisco vEdge devices, *interface-name* can be a physical interface (**ge** *slot*/*port*), a subinterface or VLAN (**ge** *slot*/*port*.*vlan-number*), the interface corresponding to the system IP address (**system**), the management interface (typically, **eth0**), or a GRE tunnel (**gre** *number*). On Cisco Catalyst SD-WAN Controllers, *interface-name* can be an interface (**eth** *number*) or the interface corresponding to the system IP address (**system**).
vpn *vpn-id*	Specific VPN: Display information about interfaces in a specific VPN.

Output Fields

The remaining output fields are self-explanatory.

Command History

Release	Modification
16.3	Command introduced.

Examples

Example 1

```
vEdge# show ipv6 interface
                                       IF      IF                                                              TCP
                 AF                    ADMIN   OPER    ENCAP                                     SPEED         MSS
                RX       TX
VPN  INTERFACE  TYPE  IPV6 ADDRESS      STATUS  STATUS  TYPE   PORT TYPE  MTU  HWADDR            MBPS   DUPLEX  ADJUST
  UPTIME      PACKETS  PACKETS  LINK LOCAL ADDRESS
-------------------------------------------------------------------------------------------------------------------
0    ge0/1      ipv6  2001::a00:1a0b/120 Up      Up      null   service    1500 00:0c:29:ab:b7:62  1000   full    1420
  0:01:30:00  2        6        fe80::20c:29ff:feab:b762/64
0    ge0/2      ipv6  2001::a00:50b/120  Up      Up      null   service    1500 00:0c:29:ab:b7:6c  1000   full    1420
  0:01:30:00  21       5        fe80::20c:29ff:feab:b76c/64
0    ge0/3      ipv6  fd00:1234::/16     Up      Up      null   service    1500 00:0c:29:ab:b7:76  1000   full    1420
  0:01:08:33  0        8        fe80::20c:29ff:feab:b776/64
0    ge0/4      ipv6  -                  Up      Up      null   service    1500 00:0c:29:ab:b7:80  1000   full    1420
  0:01:30:00  18       5        fe80::20c:29ff:feab:b780/64
0    ge0/5      ipv6  -                  Down    Up      null   service    1500 00:0c:29:ab:b7:8a  1000   full    1420
  0:01:44:19  1        1        fe80::20c:29ff:feab:b78a/64
0    ge0/6      ipv6  -                  Down    Up      null   service    1500 00:0c:29:ab:b7:94  1000   full    1420
  0:01:44:19  0        1        fe80::20c:29ff:feab:b794/64
0    ge0/7      ipv6  -                  Up      Up      null   service    1500 00:0c:29:ab:b7:9e  1000   full    1420
  0:01:43:02  55       5        fe80::20c:29ff:feab:b79e/64
0    system     ipv6  -                  Up      Up      null   loopback   1500 00:00:00:00:00:00  10     full    1420
  0:01:29:31  0        0        -
0    loopback1  ipv6  2001::a00:6501/128 Up      Up      null   transport  1500 00:00:00:00:00:00  10     full    1420
  0:03:49:09  0        0        -
0    loopback2  ipv6  2001::a00:6502/128 Up      Up      null   transport  1500 00:00:00:00:00:00  10     full    1420
  0:03:49:05  0        0        -
0    loopback3  ipv6  2001::a00:6503/128 Up      Up      null   transport  1500 00:00:00:00:00:00  10     full    1420
  0:03:49:01  0        0        -
0    loopback4  ipv6  2001::a00:6504/128 Up      Up      null   transport  1500 00:00:00:00:00:00  10     full    1420
  0:03:48:54  0        0        -
```

Example 2

```
vEdge# show ipv6 interface detail ge0/1
interface vpn 0 interface ge0/1 af-type ipv6
 if-admin-status       Up
 if-oper-status        Up
 if-addrv6
  ipv6-address 2001::a00:1a0b/120
  secondary-v6 false
  link-local   false
 if-addrv6
  ipv6-address fe80::20c:29ff:fe9b:a9bb/64
  secondary-v6 false
  link-local   true
 encap-type            null
 port-type             service
 ifindex               2
 mtu                   1500
 hwaddr                00:0c:29:9b:a9:bb
 speed-mbps            1000
 duplex                full
 auto-neg              false
 pause-type            tx_pause,rx_pause
 tcp-mss-adjust        1420
 uptime                0:03:54:48
 rx-packets            332832
 rx-octets             64713372
 rx-errors             0
 rx-drops              0
 tx-packets            66
 tx-octets             5472
 tx-errors             0
 tx-drops              16
 rx-pps                24
 rx-kbps               37
 tx-pps                0
 tx-kbps               0
 rx-ip-ttl-expired     0
 interface-disabled    0
 rx-policer-drops      0
 rx-non-ip-drops       0
 filter-drops          0
 mirror-drops          0
 cpu-policer-drops     0
 tx-icmp-policer-drops 0
 split-horizon-drops   0
 route-lookup-fail     0
 bad-label             0
 rx-multicast-pkts     21
 rx-broadcast-pkts     0
 tx-multicast-pkts     6
 tx-broadcast-pkts     2
 num-flaps             2
 rx-policer-remark     0
```

Example 3

```
vSmart# show ipv6 interface eth1
                                                    IF      IF
           TCP                                   LINK
               AF                                ADMIN   OPER    ENCAP                                      SPEED
          MSS                RX       TX       LOCAL
VPN  INTERFACE  TYPE  IPV6 ADDRESS                STATUS  STATUS  TYPE   PORT TYPE  MTU   HWADDR             MBPS
   DUPLEX  ADJUST  UPTIME      PACKETS  PACKETS  ADDRESS
-------------------------------------------------------------------------------------------------------------------
0    eth1       ipv6  2001:a0:5:0:20c:29ff:fea4:333d/64  Up      Up      null   transport  1500  00:0c:29:a4:33:3d  1000
   full    -       0:00:34:45  202689   163339   -
```

Related Topics

show interface, on page 265
show ipv6 neighbor, on page 320
show ipv6 routes, on page 323

show ipv6 neighbor

show ipv6 neighbor—Display the entries in the Address Resolution Protocol (ARP) table for IPv6 neighbors, which lists the mapping of IPv6 addresses to device MAC addresses (on Cisco vEdge devices and Cisco Catalyst SD-WAN Controllers only).

Command Syntax

show ipv6 neighbor [**vpn** *vpn-id*]

Syntax Description

	None: List all the IPv6 entries in the ARP table.
vpn *vpn-id*	Specific VPN: List the IPv6 ARP table entries for the specified VPN.

Output Fields

The output fields are self-explanatory.

Command History

Release	Modification
16.3	Command introduced.

Examples

```
vEdge# show ipv6 neighbor
      IF
VPN   NAME    IP                          MAC                STATE    IDLE TIMER  UPTIME
-------------------------------------------------------------------------------------------
0     ge0/2   2001::2                     00:0c:bd:06:47:57  static   -           0:00:00:37
0     ge0/2   fe80::20c:bdff:fe06:4757    00:0c:bd:06:47:57  static   -           0:00:00:38
0     ge0/2   fe80::250:b6ff:fe0f:1c84    00:50:b6:0f:1c:84  dynamic  0:00:00:00  0:00:00:34
```

Related Topics

clear arp, on page 20
show arp, on page 185
show ipv6 interface, on page 317
show ipv6 routes, on page 323

show ipv6 policy access-list-associations

show ipv6 policy access-list-associations—Display the IPv6 access lists that are operating on each interface (on Cisco vEdge devices only).

Command Syntax

show ipv6 policy access-list-associations

Syntax Description

None

Output Fields

The output fields are self-explanatory.

Command History

Release	Modification
16.3	Command introduced.

Example

```
vEdge# show ipv6 policy access-list-associations

             INTERFACE  INTERFACE
NAME         NAME       DIRECTION
----------------------------------------
ipv6-policy  ge0/2      out
```

Related Topics

access-list

show policy access-list-associations, on page 402

show ipv6 policy access-list-counters

show ipv6 policy access-list-counters—Display the number of packets counted by IPv6 access lists configured on the Cisco vEdge device (on Cisco vEdge devices only).

Command Syntax

show ipv6 policy access-list-counters

Syntax Description

None

Output Fields

The output fields are self-explanatory.

Command History

Release	Modification
16.3	Command introduced.

Example

```
vEdge# show ipv6 policy access-list-counters

NAME         COUNTER NAME   PACKETS   BYTES
-----------------------------------------------------------
ipv6-policy  ipv6-counter   1634      135940
```

Related Topics

access-list
show policy access-list-counters, on page 403

show ipv6 policy access-list-names

show ipv6 policy access-list-names—Display the names of the IPv6 access lists configured on the Cisco vEdge device (on Cisco vEdge devices only).

Command Syntax

show policy access-list-names

Syntax Description

None

Output Fields

The output fields are self-explanatory.

Command History

Release	Modification
16.3	Command introduced.

Examples

```
vEdge# show ipv6 policy access-list-names

NAME
--------------------
ipv6-policy
```

Related Topics

access-list
show policy access-list-names, on page 404

show ipv6 policy access-list-policers

show ipv6 policy access-list-policers—Display information about the policers configured in IPv6 access lists (on Cisco vEdge devices only).

Command Syntax

show ipv6 policy access-list-policers

Syntax Description

None

Output Fields

The output fields are self-explanatory.

Command History

Release	Modification
16.3	Command introduced.

Examples

Display a list of policers configured in access lists. This output shows that the policer named "p1_police" was applied in sequence 10 in the access list "ipv6_p1" in sequences 10, 20, and 30 in the "ipv6_plp" access list.

```
vEdge# show policy access-list-policers
                                    OOS
NAME                 POLICER NAME   PACKETS
-------------------------------------------
ipv6_p1              10.p1_police   0
ipv6_plp             10.p1_police   0
                     20.p1_police   0
                     30.p2_police   0
```

Related Topics

clear policer statistics, on page 55
show policer, on page 401
show policy access-list-policers, on page 405

show ipv6 routes

show ipv6 routes—Display the IPv6 entries in the local route table. On Cisco Catalyst SD-WAN Controllers, the route table incorporates forwarding information.

Command Syntax

show ipv6 routes [**detail**] [*ipv6-address*] [*ipv6-prefix*/*length*] [**bgp**] [**connected**] [**omp**] [**ospf**] [**static**] [**summary protocol** *protocol*] [**vpn** *vpn-id*]

show ipv6 routes vpn *vpn-id* [**detail**] [*ipv6-address*] [*ipv6-prefix*/*length*] [**bgp**] [**connected**] [**omp**] [**ospf**] [**static**]

Syntax Description

	None: List standard information about the entries in the local IPv6 route table.
detail	Detailed Information: List detailed information about the entries in the local IPv6 route table.
ipv6-address *ipv6-prefix*/*length* *prefix* **vpn** *vpn-id*	IP Address or Route Prefix: List route information for the specified IPv6 route prefix. If you omit the prefix length, you must specify a VPN identifier so that the Cisco SD-WAN software can find the route that best matches the prefix.
	Routes Learned from a Protocol: List routes learned from one or more specific protocols—**bgp**, **connected**, **omp**, **ospf**, and **static**. The protocol **static** includes both routes that are statically configured on the local device as well as routes learned from a DHCP server if one or more interfaces in VPN 0 are configured to learn their IP addresses via DHCP.
summary protocol *protocol*	Summary of Routes Learned from a Protocol: List summary information about the IP routes in the route table or about routes learned from the specified protocol. *protocol* can be **bgp**, **connected**, **omp**, **ospf**, or **static**.
vpn *vpn-id*	VPN-Specific Routes: List only the route table entries for the specified VPN.

Output Fields

The output fields are self-explanatory.

Command History

Release	Modification
16.3	Command introduced.

Examples

```
vEdge# show ipv6 routes
Codes Proto-sub-type:
  IA -> ospf-inter-area,
  E1 -> ospf-external1, E2 -> ospf-external2,
  N1 -> ospf-nssa-external1, N2 -> ospf-nssa-external2,
  e -> bgp-external, i -> bgp-internal
Codes Status flags:
  F -> fib, S -> selected, I -> inactive,
  B -> blackhole, R -> recursive
                                          PROTOCOL  NEXTHOP     NEXTHOP          NEXTHOP
VPN    PREFIX              PROTOCOL       SUB TYPE  IF NAME     ADDR             VPN      TLOC IP          COLOR
```

```
      ENCAP  STATUS
------------------------------------------------------------------------------------------------------------------------------------
0      fd00::/16          connected        -         ge0/3       -               -       -               -
      -      F,S
```

Related Topics

show ip routes, on page 303
show ipv6 interface, on page 317
show ipv6 neighbor, on page 320

show jobs

show jobs—View a list of the files that are currently being monitored on the local device. This command is the same as the UNIX jobs command.

Command Syntax

show jobs

Syntax Description

None

Output Fields

The output fields are self-explanatory.

Command History

Release	Modification
15.4	Command introduced.

Examples

Start and stop monitoring a file, and view the files that are being monitored:

```
vEdge# monitor start /var/log/vsyslog
vEdge# show jobs
JOB COMMAND
1   monitor start /var/log/vsyslog
vEdge# log:local7.notice: Dec 16 14:55:26 vsmart SYSMGR[219]:
%Viptela-vsmart-SYSMGR-5-NTCE-200025: System clock set to Wed Dec 16 14:55:26 2015  (timezone
 'America/Los_Angeles')
log:local7.notice: Dec 16 14:55:27 vsmart SYSMGR[219]: %Viptela-vsmart-SYSMGR-5-NTCE-200025:
 System clock set to Wed Dec 16 14:55:27 2015  (timezone 'America/Los_Angeles')

vEdge# monitor stop /var/log/vsyslog
vEdge#
```

Related Topics

job stop, on page 83
monitor start, on page 85
monitor stop, on page 86

show licenses

show licenses—Display the licenses for the software packages used by the Cisco SD-WAN software.

Command Syntax

show licenses [**list** | **package** *package-name*]

Syntax Description

	None: Display the licenses for all the software packages used by the Cisco SD-WAN software.
package *package-name*	Display the License for an Individual Package: Display the license for a specific software package.
list	List the Software Package Licenses: List the software packages used by the Cisco SD-WAN software.

Output Fields

The output of the **show licenses** command is quite extensive. To read all the licenses, it is recommended that you save the command output to a file:

vEdge# **show licenses** | **save** *filename*

Command History

Release	Modification
14.1	Command introduced.

Examples

```
vEdge# show licenses list
LIST OF PACKAGES
licenses
acl
apmd
attr
base-files
base-passwd
bash
beecrypt
bison
busybox
bzip2
coreutils
cracklib
db
e2fsprogs
elfutils
ethtool
```

```
file
flex
freeradius-client
gdb
grep
icu
init-ifupdown
initscripts
iperf
iproute2
iptables
kmod
libevent
libpam
libtool
liburcu
libxml2
logrotate
lttng-ust
modutils-initscripts
ncurses
net-tools
netbase
ntp
ocf-linux
openssh
openssl
opkg
opkg-config-base
pciutils
perl
procps
protobuf
protobuf-c
psplash
python-smartpm
quagga
rpm
rpm-postinsts
shadow
shadow-securetty
strace
sysfsutils
sysklogd
sysvinit
sysvinit-inittab
tar
tcpdump
tinylogin
tunctl
tzdata
udev
udev-extraconf
update-rc.d
usbutils
util-linux
v86d
valgrind
viptela-cp
```

Related Topics

show version, on page 476

show log

show log—Display the contents of system log (syslog) files.

Command Syntax

show log *filename* [**tail** *number*]

Syntax Description

Filename	Filename: Name of the syslog file.
tail *number*	Last Lines in the File: Display the last lines in the file. In *number*, specify the number of lines to display.

Output Fields

The output fields are self-explanatory.

Command History

Release	Modification
17.1	Command introduced.

Example

```
vEdge# show log messages tail 10
local7.info: Jan 25 13:46:42 vedge DHCP_CLIENT[651]: %Viptela-vedge-DHCP_CLIENT-6-INFO-1300004: Requesting renew [50%] for interface eth0 address
10.0.1.33/24
local7.info: Jan 25 13:46:42 vedge DHCP_CLIENT[651]: %Viptela-vedge-DHCP_CLIENT-6-INFO-1300010: Renewed address 10.0.1.33/24 for interface eth0
local7.info: Jan 25 13:46:42 vedge DHCP_CLIENT[651]: %Viptela-vedge-vdhcpcd-6-INFO-1400002: Notification: 1/25/2018 21:46:42 dhcp-address-renewed
severity-level:minor host-name:"vm13" system-ip::: vpn-id:512 if-name:"eth0" client-mac:"00:50:56:00:01:21" ip:10.0.1.33
auth.info: Jan 25 14:11:31 vedge sshd[31600]: Accepted publickey for admin from 10.0.1.1 port 59156 ssh2: RSA
SHA256:pkFQ5wE//DmiA0d0JU1rOt91CMTVGkscm9wLSYQrI1s
authpriv.info: Jan 25 14:11:31 vedge sshd[31600]: pam_unix(sshd:session): session opened for user admin by (uid=0)
local1.info: Jan 25 14:11:32 vedge confd[474]: audit user: admin/99 assigned to groups: viptela-reserved-system-write-task,netadmin
local1.info: Jan 25 14:11:32 vedge confd[474]: audit user: admin/99 CLI 'startup'
local1.info: Jan 25 14:11:32 vedge confd[474]: audit user: admin/99 CLI aborted
local7.info: Jan 25 14:11:34 vedge SYSMGR[257]: %Viptela-vedge-sysmgrd-6-INFO-1400002: Notification: 1/25/2018 22:11:34 system-login-change
severity-level:minor host-name:"vm13" system-ip::: user-name:"admin" user-id:99
local1.info: Jan 25 14:11:38 vedge confd[47
```

Related Topics

file list, on page 79
file show, on page 80
logging disk
logging server
show crash, on page 241
show logging, on page 329

show logging

show logging—Display the settings for logging syslog messages.

Command Syntax

show logging [*logging-parameter*]

Syntax Description

	None: Display all logging information.
logging-parameter	Specific Logging Parameter: Display information for a specific logging parameter. *logging-parameter* can be **disk_filename**, **disk_filerotate**, **disk_filesize**, **disk_priority**, **disk_status**, **host_name**, **host_priority**, **host_status**, and **host_vpn_id**.

Output Fields

The output fields are self-explanatory.

Command History

Release	Modification
14.1	Command introduced.

Example

```
Edge# show logging

System logging to  in vpn 0 is disabled
Priority for host logging is set to: info

System logging to disk is enabled
Priority for disk logging is set to:  info
File name for disk logging is set to:  /var/log/vsyslog
File size for disk logging is set to:  10 MB
File recycle count for disk logging is set to:  10

Syslog facility is set to: local7
```

Related Topics

file list, on page 79
file show, on page 80
logging disk
logging server
show crash, on page 241

show log, on page 328

show logging process

To view messages logged by binary trace for a process or processes, use the **show logging process** command in the privileged EXEC mode.

show logging process *process-name*
[**extract-pcap to-file** *path* | [**end timestamp** *ts*] [**module** *name*] [**internal**] [**start** { **last** { *n* { **days** | **hours** | **minutes** | **seconds** } **clear boot** } | **timestamp** *ts* } [**end** { **last** { *n* { **days** | **hours** | **minutes** | **seconds** } **clear boot** } | **timestamp** *ts* }]] [**level** *level*] [**fru** *slot*] [**reverse** | [**trace-on-failure** | **metadata**] [**to-file** *path*]]]

Syntax Description

process-name	Shows logs for one or more Cisco SD-WAN processes. You can specify a comma-separated list of processes, for example, `fpmd, ftm`. For the list of Cisco SD-WAN processes for which binary trace is supported see the table 'Supported Cisco SD-WAN Daemons' under 'Usage Guidelines'.
extract-pcap to-file *path*	Extracts pcap data to a file.
end timestamp *ts*	Shows logs up to the specified timestamp.
module *name*	Selects logs for specific modules.
internal	Selects all logs.
start{ **last** { *n* {**days** | **hours** | **minutes** | **seconds**} | **clear** | **boot**} | **timestamp** *ts*}[**end**{ **last** { *n* {**days** | **hours** | **minutes** | **seconds**} | **clear** | **boot**} | **timestamp** *ts*}]	Shows logs collected between the specified start and end times.
level *level*	Shows logs for the specified and higher levels.
fru *slot*	Shows logs from a specific FRU.
reverse	Shows logs in reverse chronological order.
to-file *path*	Decodes files stored in disk and writes output to file.
trace-on-failure	Shows the trace on failure summary.
metadata	Shows metadata for every log message.

Command Default

None

Command Modes

Privileged EXEC

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.4.1a	Command support introduced for select Cisco SD-WAN processes. See the table 'Supported Cisco SD-WAN Daemons' under 'Usage Guidelines'.

Usage Guidelines

Table 6: Supported Cisco SD-WAN Daemons

Cisco SD-WAN Daemons	Supported from Release
• fpmd • ftm • ompd • vdaemon • cfgmgr	Cisco IOS XE Catalyst SD-WAN Release 17.4.1a

Example

```
Device# show logging process fpmd internal start last boot
Logging display requested on 2020/11/09 07:13:08 (UTC) for Hostname: [Device], Model:
[ISR4451-X/K9], Version: [17.04.01], SN: [FOC23125GHG], MD_SN: [FGL231432EQ]

Displaying logs from the last 7 days, 0 hours, 14 minutes, 55 seconds
executing cmd on chassis local ...

2020/11/02 07:00:59.314166 {fpmd_pman_R0-0}{1}: [btrace] [7403]: (note): Btrace started for
 process ID 7403 with 512 modules
2020/11/02 07:00:59.314178 {fpmd_pman_R0-0}{1}: [btrace] [7403]: (note): File size max used
 for rotation of tracelogs: 8192
2020/11/02 07:00:59.314179 {fpmd_pman_R0-0}{1}: [btrace] [7403]: (note): File size max used
 for rotation of TAN stats file: 8192
2020/11/02 07:00:59.314179 {fpmd_pman_R0-0}{1}: [btrace] [7403]: (note): File rotation
timeout max used for rotation of TAN stats file: 600
2020/11/02 07:00:59.314361 {fpmd_pman_R0-0}{1}: [btrace] [7403]: (note): Boot level config
 file [/harddisk/tracelogs/level_config/fpmd_pman_R0-0] is not available. Skipping
2020/11/02 07:00:59.314415 {fpmd_pman_R0-0}{1}: [benv] [7403]: (note): Environment variable
 BINOS_BTRACE_LEVEL_MODULE_PMAN is not set
2020/11/02 07:00:59.314422 {fpmd_pman_R0-0}{1}: [benv] [7403]: (note): Environment variable
 FPMD_BTRACE_LEVEL is not set
2020/11/02 07:00:59.314424 {fpmd_pman_R0-0}{1}: [fpmd_pman] [7403]: (note):
BTRACE_FILE_SIZE_MAX_BYTES temporarily set to 8192, now cleared.
```

show logging profile sdwan

To view messages logged by binary trace for Cisco-SD-WAN-specific processes and process modules, use the **show logging profile sdwan** command in the privileged EXEC mode. The messages are displayed in chronological order.

show logging profile sdwan

[**extract-pcap to-file** *path* | [**end timestamp** *ts*] [**module** *name*] [**internal**] [**start** { **last** { *n* { **days** | **hours** | **minutes** | **seconds** } **clear boot** } | **timestamp** *ts* } [**end** { **last** { *n* { **days** | **hours** | **minutes** | **seconds** } **clear boot** } | **timestamp** *ts* }]] [**level** *level*] [**fru** *slot*] [**reverse** | [**trace-on-failure** | **metadata**] [**to-file** *path*]]]

Syntax Description

extract-pcap to-file *path*	Extracts pcap data to a file.
end timestamp *ts*	Shows logs up to the specified timestamp.
module *name*	Selects logs for specific modules.
internal	Selects all logs.
start{ **last** { *n* {**days** | **hours** | **minutes** | **seconds**} | **clear** | **boot**} | **timestamp** *ts*}[**end**{ **last** { *n* {**days** | **hours** | **minutes** | **seconds**} | **clear** | **boot**} | **timestamp** *ts*}]	Shows logs collected between the specified start and end times.
level *level*	Shows logs for the specified and higher levels.
fru *slot*	Shows logs from a specific FRU.
reverse	Shows logs in reverse chronological order.
to-file *path*	Decodes files stored in disk and writes output to file.
trace-on-failure	Shows the trace on failure summary.
metadata	Shows metadata for every log message.

Command Default

None

Command Modes

Privileged EXEC

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.4.1a	Command support introduced for select Cisco SD-WAN processes. See the table 'Supported Cisco SD-WAN Daemons' under 'Usage Guidelines'.

Usage Guidelines

Table 7: Supported Cisco SD-WAN Daemons

Cisco SD-WAN Daemons	Supported from Release
• fpmd • ftm • ompd • vdaemon • cfgmgr	Cisco IOS XE Catalyst SD-WAN Release 17.4.1a

Example

The following example shows a truncated output of the **show logging profile sdwan start last boot internal** command. From the timestamps, we can see that the messages are shown in a chronological order.

```
Device# show logging profile sdwan start last boot internal
Logging display requested on 2020/11/18 18:59:16 (UTC) for Hostname: [Device], Model:
[ISR4451-X/K9], Version: [17.04.01], SN: [FOC23125GHG], MD_SN: [FGL231432EQ]

Displaying logs from the last 1 days, 10 hours, 0 minutes, 20 seconds
executing cmd on chassis local …
.
.
.
2020/11/20 10:25:52.195149 {vdaemon_R0-0}{1}: [misc] [10969]: (ERR): Set chassis-number -
ISR4451-X/K9-FOC23125GHG in confd
2020/11/20 10:25:52.198958 {vdaemon_R0-0}{1}: [misc] [10969]: (ERR): Root-CA file exists -
 Set it in CDB
2020/11/20 10:25:52.200462 {vdaemon_R0-0}{1}: [vipcommon] [10969]: (debug): chasfs
property_create success sw-vip-vdaemon-done
2020/11/20 10:25:52.201467 {vip_confd_startup_sh_R0-0}{1}: [btrace_sh] [6179]: (note):
INOTIFY /tmp/chassis/local/rp/chasfs/rp/0/0/confd/ CREATE sw-vip-vdaemon-done
2020/11/20 10:25:52.202184 {vip_confd_startup_sh_R0-0}{1}: [btrace_sh] [6179]: (note):
INOTIFY /tmp/chassis/local/rp/chasfs/rp/0/0/confd/ CLOSE_WRITE-CLOSE sw-vip-vdaemon-done
2020/11/20 10:25:52.238625 {vdaemon_R0-0}{1}: [vipcommon] [10969]: (debug):
[/usr/sbin/iptables -w -A LOGGING -m limit --limit 5/m -j LOG --log-prefix "iptables-dropped:"
 --log-level 6] exited with ret: 2, output: iptables v1.8.3 (legacy): Couldn't load match
`limit':No such file or directory
2020/11/20 10:25:52.242402 {vdaemon_R0-0}{1}: [vipcommon] [10969]: (debug):
[/usr/sbin/ip6tables -w -A LOGGING -m limit --limit 5/m -j LOG --log-prefix
"ip6tables-dropped:" --log-level 6] exited with ret: 2, output: ip6tables v1.8.3 (legacy):
 Couldn't load match `limit':No such file or directory
2020/11/20 10:25:52.254181 {vdaemon_R0-0}{1}: [misc] [10969]: (ERR): Error removing
/usr/share/viptela/proxy.crt
2020/11/20 10:25:52.692474 {vdaemon_R0-0}{1}: [confd] [10969]: (ERR): Flags=1, device-type=1,
 vbond-dns=0, domain-id=0, site-id=0, system-ip=0, wan-intf=0, org-name=0, cert-inst=0,
root-cert-inst=0, port-offset=0, uuid=0
2020/11/20 10:25:52.692486 {vdaemon_R0-0}{1}: [confd] [10969]: (ERR): Returning 0
.
.
.
2020/11/20 10:26:24.669716 {fpmd_pmanlog_R0-0}{1}: [btrace] [14140]: (note): Btrace started
 for process ID 14140 with 512 modules
2020/11/20 10:26:24.669721 {fpmd_pmanlog_R0-0}{1}: [btrace] [14140]: (note): File size max
 used for rotation of tracelogs: 8192
.
.
.
2020/11/20 10:26:25.001528 {fpmd_R0-0}{1}: [fpmd] [14271]: (note): FPMD BTRACE INIT DONE
2020/11/20 10:26:25.001551 {fpmd_R0-0}{1}: [vipcommon] [14271]: (note): Vipcommon btrace
init done
2020/11/20 10:26:25.001563 {fpmd_R0-0}{1}: [chmgr_api] [14271]: (note): Chmgr_api btrace
init done
2020/11/20 10:26:25.022479 {ftmd_pmanlog_R0-0}{1}: [btrace] [14364]: (note): Btrace started
 for process ID 14364 with 512 modules
2020/11/20 10:26:25.022484 {ftmd_pmanlog_R0-0}{1}: [btrace] [14364]: (note): File size max
 used for rotation of tracelogs: 8192
2020/11/20 10:26:25.022484 {ftmd_pmanlog_R0-0}{1}: [btrace] [14364]: (note): File size max
 used for rotation of TAN stats file: 8192
2020/11/20 10:26:25.022485 {ftmd_pmanlog_R0-0}{1}: [btrace] [14364]: (note): File rotation
 timeout max used for rotation of TAN stats file: 600
```

```
2020/11/20 10:26:25.022590 {ftmd_pmanlog_R0-0}{1}: [btrace] [14364]: (note): Boot level
config file [/harddisk/tracelogs/level_config/ftmd_pmanlog_R0-0] is not available. Skipping
2020/11/20 10:26:25.022602 {ftmd_pmanlog_R0-0}{1}: [btrace] [14364]: (note): Setting level
 to 5 from [BINOS_BTRACE_LEVEL_MODULE_BTRACE_SH]=[NOTICE]
2020/11/20 10:26:25.037903 {fpmd_R0-0}{1}: [cyan] [14271]: (warn): program path package
name rp_security does not match .pkginfo name mono
2020/11/20 10:26:25.038036 {fpmd_R0-0}{1}: [cyan] [14271]: (note): Successfully initialized
 cyan library for /tmp/sw/rp/0/0/rp_security/mount/usr/binos/bin/fpmd with
/tmp/cyan/0/mono.cdb
2020/11/20 10:26:26.206844 {ftmd_R0-0}{1}: [tdllib] [14517]: (note): Flag tdlh stale epoch
 for all tdl handles
2020/11/20 10:26:26.206853 {ftmd_R0-0}{1}: [tdllib] [14517]: (note): Detect newly epoch
file generated: /tmp/tdlresolve/epoch_dir/active, new epoch:
/tmp/tdlresolve/epoch_dir//2020_11_20_10_23_8925.epoch
2020/11/20 10:26:26.206866 {ftmd_R0-0}{1}: [tdllib] [14517]: (note): epoch file read
/tmp/tdlresolve/epoch_dir//2020_11_20_10_23_8925.epoch
2020/11/20 10:26:26.334529 {plogd_R0-0}{1}: [plogd] [5353]: (debug):   Sending: facility
16. %Cisco-SDWAN-RP_0-CFGMGR-4-WARN-300001: R0/0: CFGMGR: Connection to ftm is up
2020/11/20 10:26:26.334580 {plogd_R0-0}{1}: [plogd] [5353]: (debug):   Sending: facility
16. %Cisco-SDWAN-Atlantis-B4-FTMD-4-WARN-1000007: R0/0: FTMD: Connection to TTM came up.
p_msgq 0x564c7606bc30 p_ftm 0x564c7514d8b0
2020/11/20 10:26:26.335175 {IOSRP_R0-0}{1}: [iosrp] [15606]: (warn):  *Nov 20 10:26:26.335:
 %Cisco-SDWAN-RP_0-CFGMGR-4-WARN-300001: R0/0: CFGMGR: Connection to ftm is up
.
.
.
```

show monitor event-trace sdwan

To display event trace messages for Cisco SD-WAN subsystem components, use the **show monitor event-trace** command in the privileged EXEC mode.

show monitor event-trace sdwan [**all**] *component* { **all** | **back** *hour:minute* | **clock** *hour:minute* | **from-boot** *seconds* | **latest** | **parameters** }

Syntax Description

all-traces	(Optional) Displays all event trace messages in memory to the console.
all	Displays all event trace messages currently in memory.
back *mmm* | *hhh:mm* }	Specifies how far back from the current time you want to view messages. For example, you can gather messages from the last 30 minutes. The time argument is specified either in minutes or in hours and minutes format (mmm or hh:mm).
clock *hh:mm*	Displays event trace messages starting from a specific clock time in hours and minutes format (hh:mm).
date	(Optional) Day of the month.
month	(Optional) Displays the month of the year.
from-boot *seconds*	Displays event trace messages starting from a specified number of seconds after booting (uptime).
latest	Displays only the event trace messages since the last command was entered.

parameters	Displays the trace parameters. The only parameter displayed is the size (number of trace messages) of the trace file.
detail	(Optional) Displays detailed trace information.

Command Modes

Privileged EXEC

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1r	This command was introduced.

Usage Guidelines

The trace function is not locked while information is being displayed to the console, which means that new trace messages can accumulate in memory. If entries accumulate faster than they can be displayed, some messages can be lost. If this happens, the **show monitor event-trace** command will generate a message indicating that some messages might be lost; however, messages will continue to display on the console. If the number of lost messages is excessive, the **show monitor event-trace** command will stop displaying messages.

Example

The following is sample output from the **show monitor event-trace** command for the SD-WAN device. Notice that each trace message is numbered and is followed by a time stamp (derived from the device uptime). Following the time stamp is the component-specific message data.

```
Device# show monitor event-trace sdwan all
*Nov  6 23:30:51.393: <-cfg[2] A: vrf_activate IPv4 table 0x3
*Nov  6 23:30:51.754: <-fib[2] A: vrf_activate IPv4 table 0x3
*Nov  6 23:30:51.754: ->omp[3] A: vrf IPv4
*Nov  6 23:30:52.108: <-omp[2] A: redist IPv4 ospf
*Nov  6 23:30:52.108: <-ospf A: protocol topo 3 proc ospf
*Nov  6 23:30:52.108: <-omp[2] A: redist IPv4 connected
*Nov  6 23:30:52.108: <-omp[2] A: redist IPv4 static
*Nov  6 23:30:52.108: <-omp[2] A: redist IPv4 nat
```

```
Device# req pla sof sdwan admin-tech
Requested admin-tech initiated.
[vm5:/bootflash/vmanage-admin/var/tech]$ vim sdwan_trace
*Nov  6 23:30:51.393: <-cfg[2] A: vrf_activate IPv4 table 0x3
*Nov  6 23:30:51.755: <-fib[2] A: vrf_activate IPv4 table 0x3
*Nov  6 23:30:51.755: ->omp[3] A: vrf IPv4
*Nov  6 23:30:52.107: <-omp[2] A: redist IPv4 ospf
*Nov  6 23:30:52.107: <-ospf A: protocol topo 3 proc ospf
*Nov  6 23:30:52.107: <-omp[2] A: redist IPv4 connected
*Nov  6 23:30:52.107: <-omp[2] A: redist IPv4 static
*Nov  6 23:30:52.108: <-omp[2] A: redist IPv4 nat
```

show multicast replicator

show multicast replicator—List information about multicast replicators (on Cisco vEdge devices only).

Command Syntax

show multicast replicator [**vpn** *vpn-id*]

Syntax Description

	None: List standard information about multicast replicators.
vpn *vpn-id*	VPN-Specific Replicators: List only the multicast replicators in the specified VPN.

Output Fields

The output fields are self-explanatory.

Command History

Release	Modification
14.2	Command introduced.

Example

```
vEdge# show multicast replicator

     REPLICATOR      REPLICATOR  LOAD
VPN  ADDRESS         STATUS      PERCENT
-----------------------------------------
1    172.16.255.14   UP          -
```

Related Topics

clear pim interface, on page 50
clear pim neighbor, on page 51
clear pim protocol, on page 52
clear pim rp-mapping, on page 53
clear pim statistics, on page 54
show multicast rpf, on page 337
show multicast topology, on page 338
show multicast tunnel, on page 339
show omp multicast-routes, on page 347
show pim interface, on page 394
show pim neighbor, on page 395
show pim rp-mapping, on page 396
show pim statistics, on page 397

show multicast rpf

show multicast rpf—List multicast reverse-path forwarding information (on Cisco vEdge devices only).

Command Syntax

show multicast rpf [**vpn** *vpn-id*]

Syntax Description

	None: List standard RPF information.
vpn *vpn-id*	VPN-Specific RPF Information: List the RPF information only for the specified VPN.

Output Fields

The output fields are self-explanatory.

Command History

Release	Modification
14.2	Command introduced.

Example

```
vEdge# show multicast rpf

                                        RPF   RPF
                  RPF       NEXTHOP     NBR   IF      RPF
VPN   RPF ADDRESS STATUS    COUNT       ADDR  NAME    TUNNEL
-------------------------------------------------------------
1     10.20.25.18 resolved  1           -     ge0/4   -
```

Related Topics

clear pim interface, on page 50
clear pim neighbor, on page 51
clear pim protocol, on page 52
clear pim rp-mapping, on page 53
clear pim statistics, on page 54
show multicast replicator, on page 335
show multicast topology, on page 338
show multicast tunnel, on page 339
show omp multicast-routes, on page 347
show pim interface, on page 394
show pim neighbor, on page 395

show pim rp-mapping, on page 396
show pim statistics, on page 397

show multicast topology

show multicast topology—List information related to the topology of the multicast domain (on Cisco vEdge devices only).

Command Syntax

show multicast topology [**vpn** *vpn-id*]

Syntax Description

	None: List standard information related to the topology of the multicast domain.
vpn *vpn-id*	VPN-Specific Topology Information: List multicast topology information only for the specified VPN.

Output Fields

The output fields are self-explanatory.

Command History

Release	Modification
14.2	Command introduced.

Example

```
vEdge show multicast topology
Flags:
  S: SPT switchover
OIF-Flags:
  A: Assert winner

                            JOIN                                    UPSTREAM       UPSTREAM  UPSTREAM                                    OIF
 OIF
VPN  GROUP      SOURCE      TYPE   FLAGS  RP ADDRESS  REPLICATOR     NEIGHBOR       STATE     INTERFACE      UP TIME     EXPIRES     INDEX  NAME
 FLAGS  OIF TUNNEL
-------------------------------------------------------------------------------------------------------------------------------------------------
1    225.0.0.0  0.0.0.0     (*,G)  -      58.0.1.100  172.16.255.14  172.16.255.14  joined    172.16.255.14  0:01:26:52  0:00:00:31  1      ge0/0
 -      -
1    225.0.0.1  0.0.0.0     (*,G)  -      58.0.1.100  172.16.255.14  172.16.255.14  joined    172.16.255.14  0:01:26:52  0:00:00:31  1      ge0/0
 -      -
1    225.0.0.2  0.0.0.0     (*,G)  -      58.0.1.100  172.16.255.14  172.16.255.14  joined    172.16.255.14  0:01:26:52  0:00:00:31  1      ge0/0
 -      -
1    225.0.0.3  0.0.0.0     (*,G)  -      58.0.1.100  172.16.255.14  172.16.255.14  joined    172.16.255.14  0:01:26:52  0:00:00:31  1      ge0/0
 -      -
1    225.0.0.4  0.0.0.0     (*,G)  -      58.0.1.100  172.16.255.14  172.16.255.14  joined    172.16.255.14  0:01:26:52  0:00:00:31  1      ge0/0
 -      -
1    225.0.0.9  56.0.1.100  (S,G)  -      -           -              56.0.1.100     joined    ge0/0          0:00:53:27  0:00:00:33  517    -
 -      172.16.255.14
```

Related Topics

clear pim interface, on page 50
clear pim neighbor, on page 51
clear pim protocol, on page 52
clear pim rp-mapping, on page 53
clear pim statistics, on page 54
show ip mfib oil, on page 297
show ip mfib stats, on page 298
show ip mfib summary, on page 299
show multicast replicator, on page 335
show multicast rpf, on page 337
show multicast tunnel, on page 339
show omp multicast-routes, on page 347
show pim interface, on page 394
show pim neighbor, on page 395
show pim rp-mapping, on page 396
show pim statistics, on page 397

show multicast tunnel

show multicast tunnel—List information about the IPsec tunnels between multicast peers (on Cisco vEdge devices only).

Command Syntax

show multicast tunnel [**vpn** *vpn-id*]

Syntax Description

	None: List standard information about the multicast IPsec tunnels.
vpn *vpn-id*	VPN-Specific Tunnels: List IPsec tunnel information only for the specified VPN.

Output Fields

The output fields are self-explanatory.

Command History

Release	Modification
14.2	Command introduced.

Example

```
vEdge# show multicast tunnel

     TUNNEL          TUNNEL
VPN  ADDRESS         STATUS  REPLICATOR
---------------------------------------
1    172.16.255.11   UP      no
     172.16.255.14   UP      yes
     172.16.255.15   UP      no
     172.16.255.21   UP      no
```

Related Topics

clear pim interface, on page 50
clear pim neighbor, on page 51
clear pim protocol, on page 52
clear pim rp-mapping, on page 53
clear pim statistics, on page 54
show multicast replicator, on page 335
show multicast rpf, on page 337
show multicast topology, on page 338
show omp multicast-routes, on page 347
show pim interface, on page 394
show pim neighbor, on page 395
show pim rp-mapping, on page 396
show pim statistics, on page 397

show nms-server running

show nms-server running—Display whether a vManage NMS server is operational (on vManage NMSs only).

Command Syntax

show nms-server running

Syntax Description

None

Output Fields

The output fields are self-explanatory.

Command History

Release	Modification
16.2	Command introduced.

Example

Display the operational status of a vManage server.

```
vManage# show nms-server running
nms-server running true
```

Related Topics

request nms-server, on page 130

show notification stream

show notification stream—Display notifications about events that have occurred on the Cisco SD-WAN device.

Command Syntax

show notification stream viptela [**from** *date-time*] [**last** *number*] [**to** *date-time*]

Syntax Description

	None: Display notifications about all events.
to (*ccyy-mm-dd* | *hh:mm:ss* | *ccyy-mm***T***hh:mm:ss*)	Event End Time: Display notifications of events that have occurred up until the specified date and time.
to (*ccyy-mm-dd* | *hh:mm:ss* | *ccyy-mm***T***hh:mm:ss*)	Event Start Time: Display notifications of events that have occurred up until the specified date and time.
to *number*	Most Recent Events: Display the most recent event notifications up to the specified number of events.

Output Fields

The output fields are self-explanatory.

Command History

Release	Modification
14.1	Command introduced.

Example

```
vEdge# show notification stream viptela
notification
eventTime 2013-12-06T11:47:11.420432+00:00
interface-state-change
  vpn-id 512
  if-name eth0
  new-state up
 !
!
notification
eventTime 2013-12-06T10:28:54.665583+00:00
interface-state-change
  vpn-id 0
  if-name ge0/7
  new-state up
 !
!
notification
eventTime 2013-12-06T18:32:25.568821+00:00
interface-state-change
  vpn-id 0
  if-name system
  new-state up
 !
!
notification
eventTime 2013-12-06T18:32:25.585694+00:00
omp-state-change
  new-state up
 !
!
notification
eventTime 2013-12-06T18:32:26.780149+00:00
interface-state-change
  vpn-id 0
  if-name ge0/0
  new-state up
 !
!
```

Related Topics

file list, on page 79
trap group
trap target

show ntp associations

show ntp associations—Display information about the status connections to peers.

Command Syntax

show ntp associations

Syntax Description

None

Output Fields

The output fields are self-explanatory.

Command History

Release	Modification
14.1	Command introduced.

Example

```
vEdge# show ntp associations

IDX  ASSOCID  STATUS  CONF  REACHABILITY  AUTH  CONDITION  LAST EVENT   COUNT
-------------------------------------------------------------------------------
1    18402    80a3    yes   no            none  reject     unreachable  10
2    18403    967a    yes   yes           none  sys.peer   sys_peer     7
```

Related Topics

ntp
show ntp peer, on page 343

show ntp peer

show ntp peer—Display information about the NTP peers with which the Cisco SD-WAN software is synchronizing its clocks.

Command Syntax

show ntp peer [*index*] [*parameter*]

Syntax Description

	None: Display standard information about the interfaces on the Cisco SD-WAN device.
parameter	Specific Parameter: Display information about a specific NTP parameter. *parameter* can be one of the following: **delay**, **jitter**, **offset**, **poll**, **reach**, **refif**, **remote**, **st**, **type**, and **when**.
index	Specific Peer: Display information about a specific peer, identified by its index number in the **show ntp peer** command output.

Output Fields

The output fields are self-explanatory.

Command History

Release	Modification
14.1	Command introduced.

Example

```
vEdge# show ntp peer
INDEX  REMOTE          REFID        ST  TYPE  WHEN  POLL  REACH  DELAY    OFFSET  JITTER
------------------------------------------------------------------------------------------
1      127.127.1.0     .LOCL.       14  l     5d    64    0      0.000    0.000   0.000
2      *98.191.213.7   18.26.4.105  2   u     113   1024  377    140.919  -4.328  13.535
```

Related Topics

ntp
show ntp associations, on page 342

show omp cloudexpress

show omp cloudexpress—Display OMP routes for applications configured with Cloud OnRamp for SaaS (formerly called CloudExpress service) (on Cisco vEdge devices only).

Command Syntax

show omp cloudexpress [**detail**]

Syntax Description

	None: Display OMP routes for all applications in all VPNs configured with Cloud OnRamp for SaaS.
detail	Detailed Information: List detailed information.

Output Fields

The output fields are self-explanatory.

Command History

Release	Modification
16.3	Command introduced.
Cisco SD-WAN Release 20.7.1	Added APP TYPE and SUBAPP ID columns to the command output.

The following example shows the command output as it appears beginning with Cisco SD-WAN Release 20.7.1.

```
vEdge#show omp cloudexpress
Code:
C   -> chosen
I   -> installed
Red -> redistributed
Rej -> rejected
L   -> looped
R   -> resolved
S   -> stale
Ext -> extranet
Inv -> invalid
                     APP  APP   SUBAPP
VPN  ORIGINATOR      ID   TYPE  ID      APP NAME    FROM PEER      STATUS
-------------------------------------------------------------------------
1    172.16.255.15   3    2     0       amazon_aws  172.16.255.15  C,R
                                                   172.16.255.20  C,R
1    172.16.255.16   3    0     0       amazon_aws  172.16.255.16  C,R
                                                   172.16.255.20  C,R
```

The following example shows the command output as it appears for releases before Cisco SD-WAN Release 20.7.1.

```
vEdge#show omp cloudexpress
Code:
C   -> chosen
I   -> installed
Red -> redistributed
Rej -> rejected
L   -> looped
R   -> resolved
S   -> stale
Ext -> extranet
Inv -> invalid

                     APP
VPN  ORIGINATOR      ID   APP NAME     FROM PEER      STATUS
-----------------------------------------------------------
1    172.16.255.14   1    salesforce   172.16.255.19  C,I,R
                                       172.16.255.20  C,I,R
1    172.16.255.14   16   google_apps  172.16.255.19  C,I,R
                                       172.16.255.20  C,I,R
```

Related Topics

clear cloudexpress computations, on page 26
show cloudexpress applications, on page 219
show cloudexpress gateway-exits, on page 220
show cloudexpress local-exits, on page 221

show omp multicast-auto-discover

show omp multicast-auto-discover—List the peers that support multicast (on Cisco vEdge devices and vSmart controllers only).

Command Syntax

show omp multicast-auto-discover [**detail**]

show omp multicast-auto-discover [**detail**] [**family ipv4**] [**entries advertised** *destination-peer-address*]

show omp multicast-auto-discover [**detail**] [**family ipv4**] [**entries received** *source-peer-address*] [**loss-reason** *reason* | **status** *status*]

Syntax Description

	None: List standard information about the PIM IPsec tunnels.
family ipv4 entries advertised [*destination-peer-address*]	Advertised Multicast Sources: List the multicast sources advertised.
detail	Detailed Information: List detailed information.
family ipv4 entries received *source-peer-address* [**loss-reason** *reason* | **status** *status*]	Received Multicast Sources List the multicast sources received. Include the **loss-reason** option to list specific reasons for losses of multicast sources. *reason* can be **distance**, **invalid**, **none**, **omp-version**, **origin-metric**, **origin-protocol**, **origin-protocol-subtype**, **peer-id**, **personality**, **preference**, **site-id**, **stale-entry**, **tloc-id**, and **tloc-preference**. Include the **status** option to list specific route-table status. *status* can be **C** (for chosen), **Ext** (for extranet), **I** (for installed), **Inv** (for invalid), **L** (for looped), **R** (for resolved), **Red** (for redistributed), **Rej** (for rejected), **S** (for stale), and **U** (for unknown).

Output Fields

The output fields are self-explanatory.

Command History

Release	Modification
14.2	Command introduced.

Example

```
vEdge# show omp multicast-auto-discover
Code:
C   -> chosen
I   -> installed
Red -> redistributed
Rej -> rejected
L   -> looped
R   -> resolved
```

```
S   -> stale
Ext -> extranet
Inv -> invalid

ADDRESS        SOURCE
FAMILY   VPN  ORIGINATOR     FROM PEER      STATUS
-----------------------------------------------------
ipv4     1    172.16.255.11  172.16.255.19  C,I,R
                             172.16.255.20  C,I,R
         1    172.16.255.14  172.16.255.19  C,I,R
                             172.16.255.20  C,I,R
         1    172.16.255.15  172.16.255.19  C,I,R
                             172.16.255.20  C,I,R
         1    172.16.255.16  0.0.0.0        C,Red,R
         1    172.16.255.21  172.16.255.19  C,I,R
                             172.16.255.20  C,I,R
```

Related Topics

show omp multicast-routes, on page 347
show multicast topology, on page 338

show omp multicast-routes

show omp multicast-routes—List the multicast routes that OMP has learned from PIM join messages (on Cisco vEdge devices and vSmart controllers).

Command Syntax

show omp multicast-routes [**detail**]

show omp multicast-routes [**detail**] [**family ipv4**] [**entries**]

Syntax Description

	None: List standard information about the routes that OMP has learned from PIM join messages.
detail	Detailed Information: List detailed information.
family ipv4 [**entries**]	Multicast Routes for a Protocol Family: List the multicast routes for the IPv4 protocol family.

Output Fields

The output fields are self-explanatory.

Command History

Release	Modification
14.2	Command introduced.

Example

```
vEdge# show omp multicast-routes
Code:
C   -> chosen
I   -> installed
Red -> redistributed
Rej -> rejected
L   -> looped
R   -> resolved
S   -> stale
Ext -> extranet
Inv -> invalid

ADDRESS              SOURCE
FAMILY   TYPE   VPN  ORIGINATOR     DESTINATION    GROUP      SOURCE   FROM PEER      RP           STATUS
-------------------------------------------------------------------------------------------------------
ipv4     (*,G)  1    172.16.255.14  172.16.255.16  225.0.0.1  0.0.0.0  172.16.255.19  10.20.25.18  C,I,R
                                                                       172.16.255.20  10.20.25.18  C,I,R
```

Related Topics

show omp multicast-auto-discover, on page 345
show multicast topology, on page 338

show omp peers

show omp peers—Display information about the OMP peering sessions that are active on the local vSmart controller or Cisco vEdge device.

Command Syntax

show omp peers [**detail**]

show omp peers *ip-address* [**detail**]

Syntax Description

	None: List information about all OMP peering sessions on the local device.
detail	Detailed information: Display detailed information.
ip-address	Specific OMP Peer: Display configuration OMP peering session information about a specific peer.

Output Fields

Field	Explanation
Domain ID	Identifier of the domain that the device is a member of.
downcount	Number of times an OMP peering session has gone down.
last-downtime	The last time that an OMP peering session went down.
last-uptime	The last time that an OMP peering session came up.
Peer or peer	IP address of the connected Cisco SD-WAN device.
Region ID	Region assigned for Hierarchical SD-WAN. When you use the command on a device, this is the region to which the device is assigned. When you use the command on a Cisco SD-WAN Controller, this shows the region(s) that the Cisco SD-WAN Controller is managing. For information, see Hierarchical SD-WAN.
R/I/S	Number of routes received, installed, and sent over the OMP session.
routes-installed	Number of routes installed over the OMP session.
routes-received	Number of routes received over the OMP session.
routes-sent	Number of routes sent over the OMP session.
services-installed	Number of services installed that were learned over OMP sessions.
services-received	Number of services received over OMP sessions.
services-sent	Number of services advertised over OMP sessions.
Site ID	Identifier of the Cisco SD-WAN administrative site where the connected Cisco SD-WAN device is located.
state	Operational state of the connection to the Cisco SD-WAN device: • down—The connection is not functioning. • down-in-gr—A connection on which OMP grace restart is enabled is down. init—The connection is initializing. up—The connection is operating.

Field	Explanation
tlocs-installed	Number of TLOCs installed that were learned over OMP sessions.
tlocs-received	Number of TLOCs received over OMP sessions.
tlocs-sent	Number of TLOCs advertised over OMP sessions.
Type or type	Type of Cisco SD-WAN device: • vEdge - Cisco vEdge device vsmart - vSmart controller
upcount	Number of times an OMP peering session has come up.
Uptime	How long the OMP session between the Cisco SD-WAN devices has been up and operational.

Command History

Release	Modification
14.1	Command introduced.
14.3	Down-in-gr stated added.
Cisco SD-WAN Release 20.6.1	Added Region ID to output.

Examples

Example 1

```
vEdge# show omp peers
R -> routes received
I -> routes installed
S -> routes sent

                        DOMAIN    SITE
PEER             TYPE   ID        ID        STATE    UPTIME           R/I/S
-------------------------------------------------------------------------------
172.16.255.19    vsmart 1         100       up       0:04:09:59       7/7/3
172.16.255.20    vsmart 1         200       up       0:04:10:14       7/0/3

vEdge# show omp peers 172.16.255.19 detail

peer                    172.16.255.19
type                    vsmart
domain-id               1
site-id                 100
state                   up
version                 1
legit                   yes
upcount                 1
downcount               0
last-uptime             2014-11-12T14:52:19+00:00
```

```
last-downtime             0000-00-00T00:00:00+00:00
uptime                    0:04:12:30
hold-time                 15
graceful-restart          supported
graceful-restart-interval 300
hello-sent                3032
hello-received            3030
handshake-sent            1
handshake-received        1
alert-sent                0
alert-received            0
inform-sent               5
inform-received           5
update-sent               8
update-received           27
policy-sent
policy-received
total-packets-sent        3046
total-packets-received    3063
routes-received           7
routes-installed          7
routes-sent               3
tlocs-received            4
tlocs-installed           4
tlocs-sent                1
services-received         0
services-installed        0
services-sent             1
mcast-routes-received     0
mcast-routes-installed    0
mcast-routes-sent         0
```

Example 2

```
vSmart# show omp peers
R -> routes received
I -> routes installed
S -> routes sent
                        DOMAIN    SITE
PEER             TYPE   ID        ID        STATE    UPTIME           R/I/S
-------------------------------------------------------------------------------
172.16.255.11    vedge  1         100       up       0:00:38:20       3/0/9
172.16.255.14    vedge  1         400       up       0:00:38:22       0/0/11
172.16.255.15    vedge  1         500       up       0:00:38:22       3/0/8
172.16.255.16    vedge  1         600       up       0:00:38:21       4/0/7
172.16.255.20    vsmart 1         200       up       0:00:38:24       11/0/11
172.16.255.21    vedge  1         100       up       0:00:38:20       3/0/9
```

Example 3

```
vSmart# show omp peers
R -> routes received
I -> routes installed
S -> routes sent

                        DOMAIN    SITE
PEER             TYPE   ID        ID        STATE     UPTIME           R/I/S
-------------------------------------------------------------------------------
172.16.255.11    vedge  1         100       up        0:05:19:17       3/0/5
172.16.255.14    vedge  1         400       up        0:05:19:17       0/0/7
172.16.255.15    vedge  1         500       down-in-gr                 3/0/0
172.16.255.16    vedge  1         600       down                       0/0/0
172.16.255.20    vsmart 1         200       up        0:05:19:21       7/0/7
172.16.255.21    vedge  1         100       up        0:05:19:20       3/0/5
```

Example 4

The following example shows the output when you execute the command on a Cisco vEdge device, and shows the REGION ID field added in Cisco SD-WAN Release 20.6.1.

```
vEdge# show omp peers
R -> routes received
I -> routes installed
S -> routes sent

                  DOMAIN  OVERLAY   SITE      REGION
PEER       TYPE   ID      ID        ID        ID        STATE    UPTIME       R/I/S
-------------------------------------------------------------------------------------
10.0.0.1   vsmart 1       1         50000122  2         up       0:00:01:04   0/0/25
```

Example 5

When you execute the command on a Cisco SD-WAN Controller, use the **detail** keyword to show the region-id field added in Cisco SD-WAN Release 20.6.1. The region-id field shows the region(s) that the Cisco SD-WAN Controller is managing.

```
vsmart1# show omp peers detail

peer                    10.0.0.1
type                    vedge
domain-id               1
site-id                 21000
overlay-id              1
region-id               1
state                   up
version                 1
legit                   yes
control-up              yes
staging                 no
upcount                 5
downcount               4
…
```

Related Topics

clear omp peer, on page 45
show control connections, on page 227
show omp routes, on page 352
show omp services, on page 357
show omp summary, on page 359
show omp tlocs, on page 362

show omp routes

To display information about OMP routes on Cisco Catalyst SD-WAN Controllers and Cisco vEdge devices only, use the **show omp routes** command. OMP routes carry information that the learns from the routing protocols running on its local network including routes learned from BGP and OSPF as well direct, connected, and static routes.

Command Syntax

show omp routes [*ipv4 prefix IP / length*] [**family** *family-address*] [**vpn** *vpn-id*] [**advertised**] [**received**] [**detail**]

Syntax Description

	None: Lists routing information about all OMP peering sessions on the local device.
ipv4 prefix	Displays the route prefix. Lists OMP route information for the specified route prefix.
IP	Displays IP address of the specific route. Lists OMP IP address for the specific route.
length	Displays the route length.
detail	Detailed information: Lists detailed route information about OMP peering sessions on the local device.
family *family address*	Family: Lists OMP route information for the specified IP family. *family address* can be *ipv4* or *ipv6*.
vpn *vpn-id*	VPN-Specific Routes: Lists the OMP routes for the specified VPN.
received	Received Servers: Displays the services received by OMP peering sessions.
advertised	Advertised Servers: Displays the services advertised by OMP peering sessions.

Command History

Release	Modification
14.1	Command introduced.
Cisco SD-WAN Release 20.7.1	**advertised** and **received** are added in this release.
Cisco SD-WAN Release 20.7.1	Added **REGION ID** to the output to show the Hierarchical SD-WAN region ID.
Cisco SD-WAN Release 20.8.1	Added **PREFERENCE** and **AFFINITY GROUP NUMBER** to the output to indicate the affinity group preference order and the affinity ID.

Examples

The following is a sample output from the **show omp routes** command:

```
vEdge# show omp routes
------------------------------------------------
omp route entries for vpn 1 route 10.2.2.0/24
------------------------------------------------
            RECEIVED FROM:
peer            0.0.0.0
path-id         70
label           1005
status          C,Red,R
loss-reason     not set
lost-to-peer    not set
lost-to-path-id not set
    Attributes:
     originator       172.16.255.11
     type             installed
     tloc             172.16.255.11, lte, ipsec
     ultimate-tloc    not set
     domain-id        not set
     overlay-id       1
     site-id          100
     region-id        None
     region-path      65534
     preference       not set
     tag              not set
     origin-proto     connected
     origin-metric    0
     as-path          not set
     community        not set
     unknown-attr-len not set
```

The following is a sample output from the **show omp routes vpn detail** command:

```
vEdge# show omp routes vpn 1 172.16.255.118/32 detail
------------------------------------------------
omp route entries for vpn 1 route 172.16.255.118/32
------------------------------------------------
            RECEIVED FROM:
peer            172.16.255.19
path-id         1118
label           1005
status          C,I,R
loss-reason     not set
lost-to-peer    not set
lost-to-path-id not set
    Attributes:
     originator       172.16.255.16
     type             installed
     tloc             172.16.255.16, lte, ipsec
     ultimate-tloc    not set
     domain-id        not set
     overlay-id       1
     site-id          600
     region-id        None
     region-path      65534
     preference       not set
     tag              not set
     origin-proto     eBGP
     origin-metric    0
```

```
     as-path          not set
     community        not set
     unknown-attr-len not set
            RECEIVED FROM:
peer            172.16.255.20
path-id         1093
label           1005
status          C,R
loss-reason     not set
lost-to-peer    not set
lost-to-path-id not set
    Attributes:
     originator       172.16.255.16
     type             installed
     tloc             172.16.255.16, lte, ipsec
     ultimate-tloc    not set
     domain-id        not set
     overlay-id       1
     site-id          600
     region-id        None
     region-path      65534
     preference       not set
     tag              not set
     origin-proto     eBGP
     origin-metric    0
     as-path          not set
     community        not set
     unknown-attr-len not set
% No entries found.
```

The following is a sample output from the **show omp routes vpn received** command:

```
vEdge# show omp routes vpn 1  received
-------------------------------------------------
omp route entries for vpn 1 route 10.2.2.0/24
-------------------------------------------------
            RECEIVED FROM:
peer            0.0.0.0
path-id         70
label           1005
status          C,Red,R
loss-reason     not set
lost-to-peer    not set
lost-to-path-id not set
    Attributes:
     originator       172.16.255.11
     type             installed
     tloc             172.16.255.11, lte, ipsec
     ultimate-tloc    not set
     domain-id        not set
     overlay-id       1
     site-id          100
     region-id        None
     region-path      65534
     preference       not set
     tag              not set
     origin-proto     connected
     origin-metric    0
     as-path          not set
     community        not set
     unknown-attr-len not set
```

The following is a sample output from the **show omp routes vpn advertised** command:

```
vEdge# show omp routes vpn 1 advertised
Code:
C   -> chosen
I   -> installed
Red -> redistributed
Rej -> rejected
L   -> looped
R   -> resolved
S   -> stale
Ext -> extranet
Inv -> invalid
Stg -> staged
IA  -> On-demand inactive
U   -> TLOC unresolved

VPN    PREFIX              TO PEER
-----------------------------------------
1      10.2.2.0/24         172.16.255.19
                           172.16.255.20
1      10.2.3.0/24         172.16.255.19
                           172.16.255.20
1      172.16.255.112/32   172.16.255.19
                           172.16.255.20
```

The following is a sample output from the **show omp routes received detail** command:

```
vEdge# show omp routes received detail
-------------------------------------------------
omp route entries for vpn 1 route 10.2.2.0/24
-------------------------------------------------
            RECEIVED FROM:
peer            0.0.0.0
path-id         70
label           1005
status          C,Red,R
loss-reason     not set
lost-to-peer    not set
lost-to-path-id not set
    Attributes:
     originator       172.16.255.11
     type             installed
     tloc             172.16.255.11, lte, ipsec
     ultimate-tloc    not set
     domain-id        not set
     overlay-id       1
     site-id          100
     region-id        None
     region-path      65534
     preference       not set
     tag              not set
     origin-proto     connected
     origin-metric    0
     as-path          not set
     community        not set
     unknown-attr-len not set
```

The following is a sample output from the **show omp routes advertised detail** command:

```
vEdge# show omp routes advertised  detail
-------------------------------------------------
omp route entries for vpn 1 route 10.2.2.0/24
-------------------------------------------------
            ADVERTISED TO:
```

```
peer    172.16.255.19
    Attributes:
     originator       172.16.255.11
     label            1005
     path-id          70
     tloc             172.16.255.11, lte, ipsec
     ultimate-tloc    not set
     domain-id        not set
     site-id          100
     overlay-id       1
     preference       not set
     region-id        None
     region-path      65534
     tag              not set
     origin-proto     connected
     origin-metric    0
     as-path          not set
     community        not set
     unknown-attr-len not set
            ADVERTISED TO:
peer    172.16.255.20
    Attributes:
     originator       172.16.255.11
     label            1005
     path-id          70
     tloc             172.16.255.11, lte, ipsec
     ultimate-tloc    not set
     domain-id        not set
     site-id          100
     overlay-id       1
     preference       not set
     region-id        None
     region-path      65534
     tag              not set
     origin-proto     connected
     origin-metric    0
     as-path          not set
     community        not set
     unknown-attr-len not set
```

Related Topics

clear omp routes, on page 47
show control connections, on page 227
show omp peers, on page 348
show omp services, on page 357
show omp summary, on page 359
show omp tlocs, on page 362

show omp services

show omp services—Display the services learned from OMP peering sessions (on vSmart controllers and Cisco vEdge devices only).

Command Syntax

show omp services [**vpn** *vpn-id*] [**detail**]

show omp services [**advertised** | **received**] [**vpn** *vpn-id*] [**detail**]

show omp services [**vpn** *vpn-id*] **originator** *ip-address* [**advertised** | **received**] [**detail**]

show omp services [**vpn** *vpn-id*] **service** *service-name* [**advertised** | **received**] [**detail**]

Syntax Description

	None: List information about the services learned from OMP peering sessions.
advertised	Advertised Services: List information about the services advertised by OMP peering sessions.
detail	Detailed Information: Display detailed information.
received	Received Services: List information about the services received by OMP peering sessions.
originator *ip-address*	Service Originator: List the services learned from a specific OMP peer.
service *service-name*	Specific Service: List information about the specific service.
vpn *vpn-id*	VPN: List OMP service information learned from a specific VPN.

Output Fields

The output fields are self-explanatory.

Command History

Release	Modification
14.1	Command introduced.

Example

```
vSmart# show omp services (command issued from a vSmart controller)
C   -> chosen
I   -> installed
Red -> redistributed
Rej -> rejected
L   -> looped
R   -> resolved
S   -> stale
Ext -> extranet
Inv -> invalid
                                        PATH
VPN  SERVICE  ORIGINATOR     FROM PEER      ID    LABEL  STATUS
```

```
---------------------------------------------------------------------
1     VPN       172.16.255.11  172.16.255.11  3     32772  C,I,R
                               172.16.255.20  4     32772  R
1     VPN       172.16.255.14  172.16.255.14  3     18978  C,I,R
                               172.16.255.20  2     18978  R
1     VPN       172.16.255.15  172.16.255.15  3     19283  C,I,R
                               172.16.255.20  1     19283  R
1     VPN       172.16.255.16  172.16.255.16  3     3272   C,I,R
                               172.16.255.20  3     3272   R
1     VPN       172.16.255.21  172.16.255.20  5     53645  R
                               172.16.255.21  3     53645  C,I,R
```

Related Topics

show control connections, on page 227
show omp peers, on page 348
show omp routes, on page 352
show omp summary, on page 359
show omp tlocs, on page 362

show omp summary

show omp summary—Display information about the OMP sessions running between vSmart controllers and Cisco vEdge devices (on vSmart controllers and Cisco vEdge devices only).

Command Syntax

show omp summary [*parameter-name*]

Syntax Description

	None: List information about the OMP peering sessions running on the local device
parameter-name	Information about a Specific Parameter: Display configuration information about a specific OMP peering session parameter. *parameter-name* can be one of the following: **adminstate**, **devicetype**, **ompdowntime**, **ompuptime**, **operstate**, **peers**, **routes-installed**, **routes-received**, **routes-sent**, **services-installed**, **services-sent**, **tlocs-installed**, **tlocs-received**, **tlocs-sent**, and **vsmart-peers**. For an explanation of these parameters, see the Output Fields below.

Output Fields

Field	Explanation
admin-state	Administrative state of the OMP session. It can be UP or DOWN.
omp-uptime	How long the OMP session has been up and operational.
oper-state	Operational status of the OMP session. It can be UP or DOWN.

Field	Explanation
personality	Cisco vEdge device personality.
routes-installed	Number of routes installed over the OMP session.
routes-received	Number of routes received over the OMP session.
routes-sent	Number of routes sent over the OMP session.
services-installed	Number of services installed that were learned over OMP sessions.
services-received	Number of services received over OMP sessions.
services-sent	Number of services advertised over OMP sessions.
tlocs-installed	Number of TLOCs installed that were learned over OMP sessions.
tlocs-received	Number of TLOCs received over OMP sessions.
tlocs-sent	Number of TLOCs advertised over OMP sessions.
vsmart-peers	Number of vSmart peers that are up.

Command History

Release	Modification
14.1	Command introduced.
Cisco SD-WAN Release 20.6.1	Added device-role and region-id fields.

Example

```
vEdge# show omp summary
oper-state             UP
admin-state            UP
personality            vedge
omp-uptime             0:19:05:45
routes-received        16
routes-installed       8
routes-sent            0
tlocs-received         7
tlocs-installed        3
tlocs-sent             2
services-received      1
services-installed     0
services-sent          2
mcast-routes-received  0
mcast-routes-installed 0
mcast-routes-sent      0
hello-sent             27471
hello-received         27460
```

```
hsndshake-sent          6
handshake-received      6
alert-sent              2
alert-received          2
inform-sent             8
inform-received         8
update-sent             48
update-received         213
policy-sent             0
policy-received         0
total-packets-sent      27535
total-packets-received 27689
vsmart-peers            2

vSmart# show omp summary
oper-state              UP
admin-state             UP
personality             vsmart
omp-uptime              0:19:07:20
routes-received         18
routes-installed        0
routes-sent             32
tlocs-received          8
tlocs-installed         4
tlocs-sent              16
services-received       8
services-installed      4
services-sent           4
mcast-routes-received   0
mcast-routes-installed 0
mcast-routes-sent       0
hello-sent              80765
hello-received          80782
hsndshake-sent          13
handshake-received      13
alert-sent              4
alert-received          4
inform-sent             24
inform-received         24
update-sent             633
update-received         278
policy-sent             0
policy-received         0
total-packets-sent      81439
total-packets-received 81101
vsmart-peers            1
vedge-peers             4
```

Related Topics

show control connections, on page 227
show omp peers, on page 348
show omp routes, on page 352
show omp services, on page 357
show omp tlocs, on page 362

show omp tlocs

To display information learned from the TLOC routes advertised over the OMP sessions running between and Cisco Catalyst SD-WAN Controllers and Cisco vEdge devices only, use the **show omp tlocs** command in privileged EXEC mode.

Command Syntax

show omp tlocs [**detail**] [**color lte**] [**encap ipsec**] [**ip** *ip-address*] [**advertised**] [**received**]

Syntax Description

	None: Lists information about all TLOCs that the local device has learned about.
detail	Detailed information: Displays the detailed information.
color lte	Color Information: Displays the TLOC color information.
encap ipsec	TLOC Encapsulation: Displays the TLOC encapsulation information.
ip *ip-address*	TLOC IP Address: Displays the TLOC IP address.
received	Received Servers: Displays the services received by OMP peering sessions.
advertised	Advertised Servers: Displays the services advertised by OMP peering sessions.

Command History

Release	Modification
14.1	Command introduced.
16.3	Add display of IPv6 information.
Cisco SD-WAN Release 20.7.1	**advertised** and **received** are added in this release.

Examples

The following is a sample output from the **show omp tlocs** command:

```
vEdge# show omp tlocs
--------------------------------------------------
tloc entries for 172.16.255.11
                 lte
                 ipsec
--------------------------------------------------
            RECEIVED FROM:
peer            0.0.0.0
status          C,Red,R
loss-reason     not set
lost-to-peer    not set
lost-to-path-id not set
    Attributes:
     attribute-type    installed
     encap-key         not set
     encap-proto       0
     encap-spi         357
     encap-auth        sha1-hmac,ah-sha1-hmac
     encap-encrypt     aes256
     public-ip         10.0.5.11
     public-port       12347
     private-ip        10.0.5.11
     private-port      12347
     public-ip         ::
     public-port       0
     private-ip        ::
     private-port      0
     bfd-status        up
     domain-id         not set
     site-id           100
     overlay-id        not set
     preference        0
     region-id         None
     tag               not set
     stale             not set
     weight            1
     version           3
    gen-id             0x80000014
     carrier           default
     restrict          0
     on-demand          0
     groups            [ 0 ]
     bandwidth         0
     qos-group         default-group
     border             not set
     unknown-attr-len  not set
```

The following is a sample output from the **show omp tlocs advertised** command:

```
vEdge# show omp tlocs advertised
C   -> chosen
I   -> installed
Red -> redistributed
Rej -> rejected
L   -> looped
R   -> resolved
S   -> stale
Ext -> extranet
Stg -> staged
IA  -> On-demand inactive
Inv -> invalid

ADDRESS
```

```
FAMILY   TLOC IP          COLOR            ENCAP  TO PEER
-------------------------------------------------------------------------
ipv4     172.16.255.11    lte              ipsec  172.16.255.19
                                                   172.16.255.20
```

The following is a sample output from the **show omp tlocs received** command:

```
vEdge# show omp tlocs received
----------------------------------------------------
tloc entries for 172.16.255.11
                 lte
                 ipsec
----------------------------------------------------
            RECEIVED FROM:
peer            0.0.0.0
status          C,Red,R
loss-reason     not set
lost-to-peer    not set
lost-to-path-id not set
    Attributes:
     attribute-type    installed
     encap-key         not set
     encap-proto       0
     encap-spi         357
     encap-auth        sha1-hmac,ah-sha1-hmac
     encap-encrypt     aes256
     public-ip         10.0.5.11
     public-port       12347
     private-ip        10.0.5.11
     private-port      12347
     public-ip         ::
     public-port       0
     private-ip        ::
     private-port      0
     bfd-status        up
     domain-id         not set
     site-id           100
     overlay-id        not set
     preference        0
     region-id         None
     tag               not set
     stale             not set
     weight            1
     version           3
    gen-id             0x80000014
     carrier           default
     restrict          0
     on-demand          0
     groups            [ 0 ]
     bandwidth         0
     qos-group         default-group
     border             not set
     unknown-attr-len  not set
```

The following is a sample output from the **show omp tlocs received detail** command:

```
vEdge# show omp tlocs received detail
----------------------------------------------------
tloc entries for 172.16.255.14
                 lte
                 ipsec
----------------------------------------------------
            RECEIVED FROM:
peer            172.16.255.19
```

```
status          C,I,R
loss-reason     not set
lost-to-peer    not set
lost-to-path-id not set
    Attributes:
     attribute-type    installed
     encap-key         not set
     encap-proto       0
     encap-spi         443
     encap-auth        sha1-hmac,ah-sha1-hmac
     encap-encrypt     aes256
     public-ip         10.1.14.14
     public-port       12366
     private-ip        10.1.14.14
     private-port      12366
     public-ip         ::
     public-port       0
     private-ip        ::
     private-port      0
     bfd-status        up
     domain-id         not set
     site-id           400
     overlay-id        not set
     preference        0
     region-id         None
     tag               not set
     stale             not set
     weight            1
     version           3
    gen-id             0x80000000
     carrier           default
     restrict          0
     on-demand          0
     groups            [ 0 ]
     bandwidth         0
     qos-group         default-group
     border             not set
     unknown-attr-len  not set
           RECEIVED FROM:
peer            172.16.255.20
status          C,R
loss-reason     not set
lost-to-peer    not set
lost-to-path-id not set
    Attributes:
     attribute-type    installed
     encap-key         not set
     encap-proto       0
     encap-spi         443
     encap-auth        sha1-hmac,ah-sha1-hmac
     encap-encrypt     aes256
     public-ip         10.1.14.14
     public-port       12366
     private-ip        10.1.14.14
     private-port      12366
     public-ip         ::
     public-port       0
     private-ip        ::
     private-port      0
     bfd-status        up
     domain-id         not set
     site-id           400
     overlay-id        not set
     preference        0
```

```
 region-id          None
 tag                not set
 stale              not set
 weight             1
 version            3
gen-id              0x80000000
 carrier            default
 restrict           0
 on-demand           0
 groups             [ 0 ]
 bandwidth          0
 qos-group          default-group
 border              not set
 unknown-attr-len   not set
```

Related Topics

clear omp tlocs, on page 47
show control connections, on page 227
show omp peers, on page 348
show omp routes, on page 352
show omp services, on page 357
show omp summary, on page 359

show omp verify-routes

To verify if a route prefix is available, use the **show omp verify-routes** command in privileged EXEC mode.

show omp verify-routes vpn *vpn-id prefix/length*

Syntax Description

vpn	Lists the Overlay Management Protocol (OMP) routes for the specified VPN.
vpn-id	Specifies the VPN ID to be verified.
prefix/length	Specifies route prefix and length. Lists OMP route information for the specified route prefix.

Command Default

This command has no default behavior.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco SD-WAN Release 20.8.1	This command was introduced.

Usage Guidelines

This command helps to reduce the number of steps needed for troubleshooting an OMP prefix by verifying the received and installed RIB and FIB entries, corresponding TLOCs, and BFD sessions.

Examples

The following is a sample output from the **show omp verify-routes** command displaying a prefix table with the prefix's verification details:

```
Device# show omp verify-routes vpn 1 10.2.2.0/24
Codes Route/TLOC Status:
C    -> chosen
I    -> installed
Red  -> redistributed
Rej  -> rejected
L    -> looped
R    -> resolved
S    -> stale
Ext  -> extranet
Inv  -> invalid
Stg  -> staged
O    -> On-demand inactive
U    -> TLOC unresolved
Codes Rib Status:
    F -> fib, S -> selected, I -> inactive,
    B -> blackhole, R -> recursive, L -> import

               PATH                      ATTRIBUTE
STATUS      BFD      RIB
FROM PEER       ID     LABEL  STATUS      TYPE       TLOC IP         COLOR  ENCAP   TLOC
PREFERENCE  STATUS  STATUS
--------------------------------------------------------------------------------------------
172.16.255.19    8      1005   C,I,R    installed    172.16.255.11   lte   ipsec   C,I,R
    -        up      F,S
172.16.255.19    9      1005   C,R      installed    172.16.255.11   3g    ipsec   C,R
    -        up       -
```

Table 8: show omp verify-routes Field Descriptions

Field	Description
FROM PEER	Displays the IP address of the peer from which the route is received.
PATH ID	Displays the ID of the OMP path.
LABEL	Displays the service label.
STATUS	Displays the status information codes of routes.
ATTRIBUTE TYPE	Displays the attribute type information regarding the route installation in RIB.
TLOC IP	Displays the TLOC IP address.
TLOC COLOR	Displays the TLOC color information.
TLOC ENCAP	Displays the TLOC encapsulation information.
TLOC STATUS	Displays the status information codes of TLOC.
PREFERENCE	Displays the preference information of TLOC.
BFD STATUS	Displays the connectivity status of a BFD session of a route.
RIB STATUS	Displays the code information of routes installed in RIB.

show orchestrator connections

show orchestrator connections—List the Cisco SD-WAN devices that have active DTLS connections to the vBond orchestrator (on vBond orchestrators only).

Command Syntax

show orchestrator connections [**vsmart** [*site-id*]] [**detail**]

Syntax Description

	None: List information about all the Cisco SD-WAN devices that have active DTLS connections to the vBond orchestrator.
vsmart [*site-id*]	Connections to vSmart Controllers: List information about the vSmart controllers that have active DTLS connections to the vBond orchestrator or about a vSmart controller at a specific site in the Cisco SD-WAN network.
detail	Detailed Information: Display information about the vBond connections and about the handshaking packets that are exchanged when a connection is being established, maintained, and torn down.

Output Fields

For the State columen, the operational state can be one of the following: challenge, challenge_ack, challenge_resp, connect, down, handshake, tear_down, trying, and up.

The remaining output fields are self-explanatory.

Command History

Release	Modification
14.1	Command introduced.

Examples

Example 1

```
vBond# show orchestrator connections
                                                                                PEER                    PEER
PEER     PEER     PEER             SITE        DOMAIN      PEER               PRIVATE  PEER              PUBLIC
TYPE     PROTOCOL SYSTEM IP        ID          ID          PRIVATE IP         PORT     PUBLIC IP         PORT    REMOTE COLOR
  STATE           UPTIME
-------------------------------------------------------------------------------------------------------------------------------
vsmart   dtls     172.16.255.19    100         1           10.0.5.19          12346    10.0.5.19         12346   default
  up              0:03:26:04
```

```
vsmart   dtls     172.16.255.19    100         1           10.0.5.19        12446    10.0.5.19        12446   default
  up              0:03:26:04
vsmart   dtls     172.16.255.20    200         1           10.0.12.20       12346    10.0.12.20       12346   default
  up              0:03:26:10
vsmart   dtls     172.16.255.20    200         1           10.0.12.20       12446    10.0.12.20       12446   default
  up              0:03:26:10
vmanage  dtls     172.16.255.22    200         0           10.0.12.22       12346    10.0.12.22       12346   default
  up              0:03:26:09
vmanage  dtls     172.16.255.22    200         0           10.0.12.22       12446    10.0.12.22       12446   default
  up              0:03:26:09
```

Example 2

```
vBond# show orchestrator connections  detail

----------------------------------------------------------------------------------------------
 REMOTE-COLOR- default SYSTEM-IP- 172.16.255.19   PEER-PERSONALITY- vsmart
----------------------------------------------------------------------------------------------
site-id             100
domain-id           1
protocol            dtls
private-ip          10.0.5.19
private-port        12346
public-ip           10.0.5.19
public-port         12346
state               up [Local Err: NO_ERROR] [Remote Err: NO_ERROR]
uptime              0:03:26:48
hello interval      1000
hello tolerance     12000

  Tx Statistics-
  --------------
    hello                   12408
    connects                780
    registers               0
    register-replies        365
    challenge               1
    challenge-response      0
    challenge-ack           1
    teardown                0
    teardown-all            0
    vmanage-to-peer         0
    register-to-vmanage     0

  Rx Statistics-
  --------------
    hello                   12408
    connects                0
    registers               365
    register-replies        0
    challenge               0
    challenge-response      1
    challenge-ack           0
    teardown                0
    vmanage-to-peer         0
    register-to-vmanage     0
...
```

Related Topics

show control connections, on page 227
show orchestrator local-properties, on page 373
show orchestrator statistics, on page 375

show orchestrator connections-history

show orchestrator connections-history—List the history of connections and connection attempts made by the vBond orchestrator (on vBond orchestrators only).

Command Syntax

show orchestrator connections-history [*index*] [**detail**]

show orchestrator connections-history *connection-parameter* [**detail**]

Syntax Description

	None: List the history of connections and connection attempts between Cisco vEdge devices and the vBond orchestrator.
detail	Detailed Output: List detailed connection history information and information about the handshaking packets that are exchanged when a connection is being established, maintained, and torn down.
connection-parameter	Specific Connection Parameter: List the connection history only for those items match the connection parameter. *connection-parameter* can be one of the following: **domain-id, peer-type**, **private-ip**, **private-port**, **public-ip**, **public-port**, **site-id**, and **system-ip**. These values corresponds to the column headers in the output of the show orchestrator connections-history command.
index	Specific History Item: List the connection history only for the specific item in the history list.

Output Fields

Field	Explanation
Domain ID	Administrative state of the interface: • state-down—The interface has not been configured. state-up—The interface has been configured.
Index	Index counter of the connection operation. The initial operation has an index of 0. The newest operation is listed first.

Field	Explanation
Peer Type	Type of Cisco SD-WAN device: • vmanage—vManage management configuration system. vsmart—vSmart controller.
Private IP	Private IP address of the connected Cisco SD-WAN device. If the Cisco SD-WAN device is behind a NAT device, the private and public IP addresses are different.
Private Port	Private UDP port number used to connect to the vBond orchestrator. If the Cisco SD-WAN device is behind a NAT device, the private and public UDP port numbers are likely different.
Public IP	Public IP address of the connected Cisco SD-WAN device.
Public Port	Public UDP port number used to connect to the vBond orchestrator.
Site ID	Identifier of the Cisco SD-WAN administrative site where the connected Cisco SD-WAN device is located.
State	Operational state of the connection to the Cisco SD-WAN device. It can be one of the following: challenge, challenge_ack, challenge_resp, connect, down, handshake, tear_down, trying, and up.
System IP	System IP address of the Cisco SD-WAN device.
Uptime	How long the connection between the Cisco SD-WAN device and the vBond orchestrator has been up and operational.

Command History

Release	Modification
14.1	Command introduced.

Example

Example 1

```
vEdge# show orchestrator connections-history
Legend for Errors
BDSGVERFL  - Board ID signature verify failure        ORPTMO    - Remote client peer timeout
```

```
BIDNTPR    - Board ID not initialized                RMGSPR    - Remove global saved peer
BIDNTVRFD  - Peer board ID certificate not verified  RXTRDWN   - Received teardown
CRTREJSER  - Challenge response rejected by peer     RDSIGFBD  - Read signature from board ID failed
CRTVERFL   - Fail to verify peer certificate         SSLNFAIL  - Failure to create new SSL context
CTORGNMMIS - Certificate organization name mismatch  SERNTPRES - Serial number not present
DCONFAIL   - DTLS connection failure                 TMRALC    - Memory failure
DEVALC     - Device memory allocation failures       TUNALC    - Memory failure
DHSTMO     - DTLS handshake timeout                  UNMSGBDRG - Unknown message type or bad register message
DISCVBD    - Disconnect vBond after register reply   UNAUTHEL  - Recd hello from unauthenticated peer
DISTLOC    - TLOC disabled                           VBDEST    - vDaemon process terminated
DUPSER     - Duplicate serial number                 VECRTREV  - vEdge certification revoked
IP_TOS     - Socket options failure                  VSCRTREV  - vSmart certificate revoked
LISFD      - Listener socket FD error                VB_TMO    - Peer vBond timed out
MEMALCFL   - Memory allocation failure               VM_TMO    - Peer vManage timed out
NOACTVB    - No active vBond found to connect to     VP_TMO    - Peer vEdge timed out
NOERR      - No error                                VS_TMO    - Peer vSmart timed out
NOSLPRCRT  - Unable to get peer's certificate        XTVSTRDN  - Extra vSmart teardown
```

PEER TYPE	PEER PROTOCOL	PEER SYSTEM IP	SITE ID	DOMAIN ID	PEER PRIVATE IP	PEER PRIVATE PORT	PEER PUBLIC IP	PEER PUBLIC PORT	REMOTE COLOR	LAST STATE	TIME WHEN LOCAL/REMOTE	LAST CHANGED
vedge	dtls	172.16.255.14	400	1	10.1.14.14	12350	10.1.14.14	12350	lte	trying	RXTRDWN/DISCVBD	2014-07-21T18:23:14
vedge	dtls	172.16.255.16	600	1	10.1.16.16	12346	10.1.16.16	12346	lte	trying	RXTRDWN/DISCVBD	2014-07-21T18:23:14
vedge	dtls	172.16.255.15	500	1	10.1.15.15	12346	10.1.15.15	12346	lte	trying	RXTRDWN/DISCVBD	2014-07-21T18:23:00
vedge	dtls	172.16.255.15	500	1	10.1.15.15	12346	10.1.15.15	12346	lte	trying	RXTRDWN/DISCVBD	2014-07-21T18:22:44
vedge	dtls	172.16.255.16	600	1	10.1.16.16	12346	10.1.16.16	12346	lte	trying	RXTRDWN/DISCVBD	2014-07-21T18:22:43
vedge	dtls	172.16.255.14	400	1	10.1.14.14	12350	10.1.14.14	12350	lte	trying	RXTRDWN/DISCVBD	2014-07-21T18:22:28
vmanage	dtls	172.16.255.22	200	0	10.0.12.22	12346	10.0.12.22	12346	default	tear_down	VM_TMO/NOERR	2014-07-21T18:22:28
vedge	dtls	172.16.255.15	500	1	10.1.15.15	12346	10.1.15.15	12346	lte	trying	RXTRDWN/DISCVBD	2014-07-21T13:39:47
vedge	dtls	172.16.255.14	400	1	10.1.14.14	12350	10.1.14.14	12350	lte	trying	RXTRDWN/DISCVBD	2014-07-21T13:39:46
vedge	dtls	172.16.255.16	600	1	10.1.16.16	12346	10.1.16.16	12346	lte	trying	RXTRDWN/DISCVBD	2014-07-21T13:39:46
vedge	dtls	172.16.255.15	500	1	10.1.15.15	12346	10.1.15.15	12346	lte	trying	RXTRDWN/DISCVBD	2014-07-21T13:39:31
vedge	dtls	172.16.255.14	400	1	10.1.14.14	12350	10.1.14.14	12350	lte	trying	RXTRDWN/DISCVBD	2014-07-21T13:39:31
vedge	dtls	172.16.255.16	600	1	10.1.16.16	12346	10.1.16.16	12346	lte	trying	RXTRDWN/DISCVBD	2014-07-21T13:39:31
vsmart	dtls	172.16.255.20	100	1	10.0.12.20	12346	10.0.12.20	12346	default	up	RXTRDWN/DISTLOC	2014-07-21T13:39:15
vedge	dtls	172.16.255.16	600	1	10.1.16.16	12346	10.1.16.16	12346	lte	trying	RXTRDWN/DISCVBD	2014-07-21T13:39:10
vedge	dtls	172.16.255.14	400	1	10.1.14.14	12350	10.1.14.14	12350	lte	trying	RXTRDWN/DISCVBD	2014-07-21T13:39:10
vedge	dtls	172.16.255.15	500	1	10.1.15.15	12346	10.1.15.15	12346	lte	trying	RXTRDWN/DISCVBD	2014-07-21T13:39:10

Example 2

```
vEdge# show orchestrator connections-history 0 detail
-------------------------------------------------------------------------------------
 REMOTE-COLOR- lte SYSTEM-IP- 172.16.255.15   PEER-PERSONALITY- vedge
-------------------------------------------------------------------------------------
site-id             500
domain-id           1
protocol            dtls
private-ip          10.1.15.15
private-port        12346
```

```
public-ip           10.1.15.15
public-port         12346
state               trying [Local Err: ERR_RX_TEAR_DOWN] [Remote Err: ERR_DISCONNECT_VBOND]
downtime            2014-07-21T13:39:10

  Tx Statistics-
  --------------
    hello                   0
    connects                0
    registers               0
    register-replies        1
    challenge               1
    challenge-response      0
    challenge-ack           1
    teardown                0
    teardown-all            0
    vmanage-to-peer         0
    register-to-vmanage     0

  Rx Statistics-
  --------------
    hello                   0
    connects                0
    registers               1
    register-replies        0
    challenge               0
    challenge-response      1
    challenge-ack           0
    teardown                1
    vmanage-to-peer         0
    register-to-vmanage     0
```

Related Topics

show control connections, on page 227
show orchestrator local-properties, on page 373
show orchestrator statistics, on page 375

show orchestrator local-properties

show orchestrator local-properties—Display the basic configuration parameters of a vBond orchestrator (on vBond orchestrators only).

Command Syntax

show orchestrator local-properties [*parameter*]

Syntax Description

	None: Display the basic vBond configuration parameters.
parameter	Information about a Specific Parameter: Display configuration information about a specific parameter. *parameter* can be one of the following: **board-serial**, **certificate-not-valid-after**, **certificate-note-valid-before,** **certificate-status**, **certificate-validity**, **device-type**, **number-active-wan-interfaces**, **organization-name**, **protocol**, **root-ca-chain-status**, **system-ip**, **uuid**, and **wan-interface-list**.

Output Fields

The output fields are self-explanatory.

Command History

Release	Modification
14.1	Command introduced.

Example

```
vBond# show orchestrator local-properties
personality                   vbond
organization-name             Cisco, Inc.
system-ip                     172.16.255.14
certificate-status            Installed
root-ca-chain-status          Installed

certificate-validity          Valid
certificate-not-valid-before  Feb 16 21:07:01 2016 GMT
certificate-not-valid-after   Feb 15 21:07:01 2017 GMT
chassis-num/unique-id         8155a210-9342-459c-b404-5904895236e0
serial-num                    1234560B

number-active-wan-interfaces 1
protocol                      dtls
                                                      ADMIN     OPERATION
INDEX  IP               PORT  VSMARTS  VMANAGES       STATE     STATE
------------------------------------------------------------------------
0      10.1.14.14       12346 4        1              up         up
```

Related Topics

show control local-properties, on page 233
show orchestrator connections, on page 368
show system status, on page 459

show orchestrator reverse-proxy-mapping

show orchestrator reverse-proxy-mapping—Display the proxy IP addresses and port numbers that are configured for use by reverse proxy (on vBond orchestrators only).

Command Syntax

show orchestrator reverse-proxy-mapping

Syntax Description

None

Output Fields

The output fields are self-explanatory.

Command History

Release	Modification
18.2	Command introduced.

Example

```
vBond# show orchestrator reverse-proxy-mapping
                                                    PRIVATE               PROXY
UUID                                    PRIVATE IP  PORT     PROXY IP     PORT
------------------------------------------------------------------------------
00096956-7471-471b-99b6-15e1ba6cb187  10.0.12.19  23456    10.0.37.19  23456
00096956-7471-471b-99b6-15e1ba6cb187  10.0.12.19  23556    10.0.37.19  23556
63636bc5-b0fc-4b42-a6e8-d122357b0431  10.0.12.20  23456    10.0.37.20  23456
63636bc5-b0fc-4b42-a6e8-d122357b0431  10.0.12.20  23556    10.0.37.20  23556
cb8d64af-59bb-4c58-900a-267089977eb8  10.0.12.22  23456    10.0.37.22  23456
cb8d64af-59bb-4c58-900a-267089977eb8  10.0.12.22  23556    10.0.37.22  23556
```

Related Topics

clear reverse-proxy context, on page 59
show certificate reverse-proxy, on page 210
show control connections, on page 227
show control local-properties, on page 233

show orchestrator statistics

show orchestrator statistics—Display statistics about the packets that a vBond orchestrator has transmitted and received in the process of establishing and maintaining secure DTLS connections to Cisco SD-WAN devices in the overlay network (on vBond orchestrators only).

Command Syntax

show orchestrator statistics [*counter-name*]

Syntax Description

	None: Display statistics about handshaking packets sent and received by the vBond orchestrator as it establishes, maintains, and tears down DTLS connections to the Cisco SD-WAN devices in the overlay network.
counter-name	Statistics about a Specific Counter: Display the statistics for the specific counter.

Output Fields

Rx Statistics: Statistics about received handshaking packets.

Tx Statistics: Statistics about transmitted handshaking packets.

Command History

Release	Modification
14.1	Command introduced.

Example

```
vBond# show orchestrator statistics

Tx Statistics:
--------------
Packets                    3180
Octets                     357705
Error                      0
Blocked                    0
Connects                   1599
Registers                  0
Register Replies           1581

DTLS Handshake             0
DTLS Handshake Failures    0
DTLS Handshake Done        0

Challenge                  25
Challenge Response         0
Challenge Ack              25
Challenge Errors           0
Challenge Response Errors  0
Challenge Ack Errors       0
Challenge General Errors   0

Rx Statistics:
--------------
Packets                    48297
Octets                     2207567
Errors                     0
Connects                   0
Registers                  1581
Register Replies           0

DTLS Handshake             74
DTLS Handshake Failures    0
DTLS Handshake Done        25

Challenge                  0
Challenge Response         25
Challenge Ack              0
Challenge Failures         0
```

Related Topics

show orchestrator connections, on page 368
show orchestrator local-properties, on page 373

show orchestrator summary

show orchestrator summary—Display a count of the Cisco vEdge devices, vManage Network Management Systems (NMSs), and vSmart controllers in the overlay network (on vBond orchestrators only). For vBond orchestrators running on virtual machines (VMs) that have more than one core, this command shows the number of devices that each vdaemon process is handling.

Command Syntax

show orchestrator summary [*instance*]

Syntax Description

	None: Display a count of all the Cisco vEdge devices, vManage NMSs, and vSmart controllers in the overlay network.
instance	Devices for a Specific vdaemon Process: Display a count of devices for a specific instance of a vdaemon process. Cisco SD-WAN devices that run on VMs that have more than one core automatically spawn one vdaemon process for each core, to load-balance the Cisco SD-WAN software functions across all the CPUs in the VM server.

Output Fields

The output fields are self-explanatory.

Command History

Release	Modification
14.1	Command introduced.
15.4	Add support for multiple vdaemon processes.
16.3	Add support for IPv6.

Example

```
vBond# show orchestrator summary

          VMANAGE  VSMART  VEDGE             LISTENING   LISTENING  LISTENING
INSTANCE  COUNTS   COUNTS  COUNTS  PROTOCOL  IP          IPV6       PORT
-------------------------------------------------------------------------------
0         2        4       0       dtls      10.1.14.14  ::         12346
```

Related Topics

show control summary, on page 239
show orchestrator connections, on page 368

show orchestrator valid-vedges

show orchestrator valid-vedges—List the chassis numbers of the valid Cisco vEdge devices in the overlay network (on vBond orchestrators only).

Command Syntax

show orchestrator valid-vedges

Syntax Description

None

Output Fields

The output fields are self-explanatory.

Command History

Release	Modification
14.1	Command introduced.
14.2	Command renamed from **show orchestrator valid-devices**.

Example

```
vBond# show orchestrator valid-vedges

                SERIAL
CHASSIS NUMBER  NUMBER    VALIDITY
----------------------------------
11OD113140004   10000266  valid
11OD145130082   10000142  staging
11OD252130046   100001FF  valid
11OD252130049   1000020B  valid
11OD252130057   1000020C  staging
R26OC126140004  10000369  valid
```

Related Topics

show control valid-vedges, on page 240
show control valid-vsmarts, on page 241
show orchestrator connections, on page 368
show orchestrator valid-vmanage-id, on page 378
show orchestrator valid-vsmarts, on page 379

show orchestrator valid-vmanage-id

show orchestrator valid-vmanage-id—List the chassis numbers of the valid vManage NMSs in the overlay network (on vBond orchestrators only).

Command Syntax

show orchestrator valid-vmanage-id [*serial-number*]

Syntax Description

	None: Display the chassis numbers of all valid vManage NMSs in the overlay network.
serial-number	Serial Number: List whether a specific vManage chassis number is valid.

Output Fields

The output fields are self-explanatory.

Command History

Release	Modification
16.3.1	Command introduced.

Example

```
vBond# show orchestrator valid-vmanage-id

CHASSIS NUMBER
--------------------------------------
72d0229c-7bb6-4bfd-b7f3-648fc78392c7
db51d941-9055-44a3-8f9f-09e305e0d60e
f23cfb69-8485-4e95-b02a-f5b27c9809b7
```

Related Topics

show control valid-vedges, on page 240
show control valid-vsmarts, on page 241
show orchestrator connections, on page 368
show orchestrator valid-vedges, on page 378
show orchestrator valid-vsmarts, on page 379

show orchestrator valid-vsmarts

show orchestrator valid-vsmarts—List the serial numbers of the valid vSmart controllers in the overlay network (on vBond orchestrators only).

Command Syntax

show orchestrator valid-vsmarts [*serial-number*]

Syntax Description

	None: Display the serial numbers of all valid vSmart controllers in the overlay network.
serial-number	Serial Number: List whether a specific vSmart serial number is valid.

Output Fields

The output fields are self-explanatory.

Command History

Release	Modification
14.1	Command introduced.

Example

```
vBond# show orchestrator valid-vsmarts

SERIAL
NUMBER
----------
12345601
12345602
```

Related Topics

show control valid-vedges, on page 240
show control valid-vsmarts, on page 241
show orchestrator connections, on page 368
show orchestrator valid-vedges, on page 378
show orchestrator valid-vmanage-id, on page 378
show orchestrator valid-vsmarts, on page 379

show ospf database

show ospf database—List the entries in the OSPF Link-State Advertisement (LSA) database (on Cisco vEdge devices only).

Command Syntax

show ospf database [**vpn** *vpn-id*] [*ospf-parameter*] [**detail**]

Syntax Description

	None: List all the entries in the OSPF LSA database.
detail	Detailed Information: List detailed information about the entries in the OSPF LSA database.
ospf-parameter	Specific OSPF Property: List information about a specific OSPF property. *ospf-property* can be one of the following: **adv-route**, **area**, **area-local-opaque**, **as-external-opaque**, **asbr-summary**, **external**, **group-member**, **link-id**, **link-local-opaque**, **network**, **nssa-external**, **router**, **summary**, and **type-ext-attributes**.
vpn *vpn-id*	VPN-Specific Routes List the OSPF routing process information for the specified VPN.

Output Fields

The output fields are self-explanatory.

Command History

Release	Modification
14.1	Command introduced.

Example

Example 1

```
vEdge# show ospf database
              LSA                 LINK              ADVERTISING
VPN     AREA  TYPE                ID                ROUTER            AGE       CHECKSUM  SEQ#
-------------------------------------------------------------------------------------------------
0       51    router              172.16.255.11     172.16.255.11     624       0xe19f    0x80000004
0       51    router              172.16.255.13     172.16.255.13     622       0x2dd9    0x80000010
0       51    router              172.16.255.14     172.16.255.14     622       0xb6ad    0x80000004
0       51    router              172.16.255.15     172.16.255.15     623       0xca94    0x80000004
0       51    router              172.16.255.16     172.16.255.16     625       0xde7b    0x80000004
0       51    router              172.16.255.21     172.16.255.21     623       0xcb96    0x80000005
0       51    network             10.0.5.13         172.16.255.13     623       0x8f7c    0x80000002
0       51    network             10.1.14.13        172.16.255.13     622       0xa134    0x80000001
0       51    network             10.1.15.13        172.16.255.13     623       0xa42f    0x80000001
0       51    network             10.1.16.13        172.16.255.13     625       0xa72a    0x80000001
1       0     router              172.16.255.11     172.16.255.11     699       0xc5bd    0x80000003
1       0     router              172.16.255.12     172.16.255.12     699       0xce55    0x80000007
1       0     router              172.16.255.21     172.16.255.21     704       0x2238    0x80000003
1       0     network             10.2.2.12         172.16.255.12     700       0xf9ec    0x80000001
1       0     network             10.2.3.21         172.16.255.21     704       0xe6e2    0x80000001
```

Example 2

```
vEdge# show ospf database area 0 detail

      OSPF Router with ID - <172.16.255.11>

      Router Link States <VPN 1 AREA 0>

LS age - 489
Options - 0x2 <E>
LS Flags - 0x3
Flags - 0x2 <ASBR>
LS Type - router-LSA
Link State ID - 172.16.255.11
Advertising Router - 172.16.255.11
LS Seq Number - 0x8000001c
Checksum - 0x93d6
Length - 36
  Number of Links - 1

      Link connected to - a transit Network
       (Link Id) Designated Router address - 10.2.2.12
       (Link Data) Router Interface Address - 10.2.2.11
        Number of TOS metrics - 0
        TOS 0 Metric - 10
...
```

Related Topics

clear ospf database, on page 50
show ospf database-summary, on page 382
show ospf interface, on page 383
show ospf neighbor, on page 385
show ospf process, on page 386
show ospf routes, on page 388

show ospf database-summary

show ospf database-summary—List how many of each type of LSA is present in the OSPF database, along with the total number of LSAs in the database (on Cisco vEdge devices only).

Command Syntax

show ospf database-summary [**vpn** *vpn-id*] [*ospf-lsa*]

Syntax Description

	None: List a summary of all the LSAs in the OSPF LSA database.
ospf-lsa	Specific OSPF LSA Type: List information about a specific OSPF LSA. *ospf-lsa* can be one of the following: **as-external-lsa**, **network-lsa**, **nssa-lsa**, **router-lsa**, **summary-lsa**, and **total-lsa**.

vpn *vpn-id*	VPN-Specific Routes List the OSPF routing process information for the specified VPN.

Output Fields

The output fields are self-explanatory.

Command History

Release	Modification
14.1	Command introduced.

Example

```
vEdge# show ospf database-summary

                                        AS
            ROUTER  NETWORK  SUMMARY  EXTERNAL  NSSA  TOTAL
VPN  AREA   LSA     LSA      LSA      LSA       LSA   LSA
-------------------------------------------------------------
0    51     6       4        0        0         0     10
```

Related Topics

show ospf database, on page 380
show ospf interface, on page 383
show ospf neighbor, on page 385
show ospf process, on page 386
show ospf routes, on page 388

show ospf interface

show ospf interface—Display information about interfaces that are running OSPF (onCisco vEdge devices only).

Command Syntax

show ospf interface [**vpn** *vpn-id*]

show ospf route vpn *vpn-id*[*ip-address* [*interface-index* [*ospf-property*]]]

Syntax Description

	None: List standard information about all interfaces that are running OSPF.
if-name *interface-name*	OSPF Interface: Display interface-specific OSPF information.

vpn *vpn-id ip-address* [*interface-index*[*ospf-property*]]	Specific OSPF Interface Information: Display information about the OSPF interface in the specified VPN and with the specified IP address, and optionally for a specific interface index and a specific OSPF property on that interface. *ospf-property* can be one of the fields in the **show ospf interface** command output.
vpn *vpn-id*	VPN-Specific Interfaces: Display information about the OSPF interfaces in the specified VPN.

Output Fields

The output fields are self-explanatory.

Command History

Release	Modification
14.1	Command introduced.

Example

```
vEdge# show ospf interface vpn 1
ospf interface vpn 1 10.2.2.11/24 0
 if-name                      ge0/0
 mtu                          1500
 bandwidth                    0
 area-addr                    0
 mtu-mismatch                 true
 router-id                    172.16.255.11
 if-type                      broadcast
 cost                         10
 delay                        1
 ospf-if-state                if-backup
 priority                     1
 designated-router-id         172.16.255.12
 backup-designated-router-id 172.16.255.11
 designated-router-ip         10.2.2.12
 backup-designated-router-ip 10.2.2.11
 members                      designated
 hello-timer                  10
 dead-interval                40
 retransmit-timer             5
 neighbor-count               1
 adj-neighbor-count           1
 hello-due-time               5
 oper-state                   true
```

Related Topics

show ospf database, on page 380
show ospf database-summary, on page 382
show ospf neighbor, on page 385
show ospf routes, on page 388

show ospf neighbor

show ospf neighbor—List information about OSPF neighbors (on vEdge routers only).

Command Syntax

show ospf neighbor [**detail**] [**vpn** *vpn-id*]

show ospf route vpn *vpn-id* [*ip-address*[*ospf-property*]]

Syntax Description

	None: List standard information about OSPF neighbors.
detail	Detailed Information: List detailed information about OSPF neighbors.
vpn *vpn-id ip-address* [*ospf-property*]	Specific OSPF Route Information: List the information about entries for specific OSPF route and, optionally, for a specific interface index and a specific OSPF property on that interface. For a list of OSPF properties, see the fields in the **show ospf neighbor detail** command output, shown below.
vpn *vpn-id*	VPN-Specific Routes: List only the OSPF neighbors in the specified VPN.

Command History

Release	Modification
14.1	Command introduced.

Examples

Example 1

```
vEdge# show ospf neighbor
DBsmL -> Database Summary List
RqstL -> Link State Request List
RXmtl -> Link State Retransmission List
                INTERFACE  IF                                    DEAD

VPN  ADDRESS    INDEX      NAME   NEIGHBOR ID    STATE    PRI   TIMER  DBsmL  RqstL  RXmtL

-------------------------------------------------------------------------------------------
0    10.0.5.13  0          ge0/2  172.16.255.13  full     13    36     0      0      0

0    10.0.5.21  0          ge0/2  172.16.255.21  two-way  0     36     0      0      0
```

```
1    10.2.2.12  0          ge0/0  172.16.255.12  full     1    36     0      0      0
```

Example 2

```
vEdge# show ospf neighbor vpn 1 detail
ospf neighbor vpn 1 neighbor 10.2.2.12 interface-index 0
 if-name                     ge0/0
 router-id                   172.16.255.12
 if-address                  10.2.2.12
 area                        0
 area-type                   regular
 neighbor-state              full
 interface-state             if-dr
 priority                    1
 state-changes               6
 progressive-change-time     504
 designated-router-id        10.2.2.12
 backup-designated-router-id 10.2.2.11
 dead-timer                  30
 db-summary-list             0
 link-state-req-list         0
 link-state-retrans-list     0
 options                     E
```

Related Topics

show ospf database, on page 380
show ospf database-summary, on page 382
show ospf interface, on page 383
show ospf process, on page 386
show ospf routes, on page 388

show ospf process

show ospf process—Display information about each OSPF routing process running on the vEdge router (on vEdge routers only).

Command Syntax

show ospf process [**vpn** *vpn-id*] [*ospf-property*]

show ospf process area *area-id* [*ospf-property*]

Syntax Description

	None: List information about the OSPF routing process.
area *area-id* [*ospf-property*]	Specific OSPF Property: List information about a specific OSPF property. *ospf-property* can be one of the fields in the **show ospf process** command output, shown below.

vpn *vpn-id*	VPN-Specific Routes: List the OSPF routing process information for the specified VPN.

Command History

Release	Modification
14.1	Command introduced.

Examples

```
vEdge# show ospf process
ospf process vpn 0
 router-id             172.16.255.11
 rfc1583-compatible    true
 spf-delay             200
 spf-holdtime          1000
 spf-max-holdtime      10000
 spf-hold-multiplier   3
 spf-last-exec-time    1030
 lsa-refresh-interval  10
 external-lsa-count    0
 external-lsa-checksum 0
 number-areas          1
 ignore-down-bit       false
 hello-received        230
 hello-sent            116
 dbd-received          4
 dbd-sent              6
 ls-req-received       2
 ls-req-sent           2
 ls-upd-received       24
 ls-upd-sent           8
 ls-ack-received       9
 ls-ack-sent           11
 area 51
  num-interfaces       1
  num-full-adj-routers 2
  spf-exec-count       12
  lsa-count            10
  router-lsa-count     6
  router-lsa-checksum  277194
  network-lsa-count    4
  network-lsa-checksum 162825
  summary-lsa-count    0
  summary-lsa-checksum 0
  asbr-lsa-count       0
  asbr-lsa-checksum    0
  nssa-lsa-count       0
  nssa-lsa-checksum    0
ospf process vpn 1
 router-id             172.16.255.11
 rfc1583-compatible    true
 spf-delay             200
 spf-holdtime          1000
 spf-max-holdtime      10000
 spf-hold-multiplier   3
 spf-last-exec-time    1030
 lsa-refresh-interval  10
```

```
external-lsa-count    15
external-lsa-checksum 464360
number-areas          1
ignore-down-bit       false
hello-received        122
hello-sent            123
dbd-received          3
dbd-sent              3
ls-req-received       1
ls-req-sent           1
ls-upd-received       27
ls-upd-sent           24
ls-ack-received       6
ls-ack-sent           8
area 0
 backbone-area        true
 num-interfaces       1
 num-full-adj-routers 1
 spf-exec-count       8
 lsa-count            5
 router-lsa-count     3
 router-lsa-checksum  112202
 network-lsa-count    2
 network-lsa-checksum 122064
 summary-lsa-count    0
 summary-lsa-checksum 0
 asbr-lsa-count       0
 asbr-lsa-checksum    0
 nssa-lsa-count       0
 nssa-lsa-checksum    0
```

Related Topics

show ospf database, on page 380
show ospf database-summary, on page 382
show ospf interface, on page 383
show ospf neighbor, on page 385
show ospf routes, on page 388

show ospf routes

Display the entries that the route table has learned from OSPF (on vEdge routers only).

show ospf routes [**detail**] [*prefix*/*length*] [**vpn** *vpn-id*]**show ospf routes vpn** *vpn-id* [*route-type* [*prefix*/*length*]]

Syntax Description

None	List standard information about the entries the route table has learned from OSPF.
Detailed Information	**detail** List detailed information about the entries the route table has learned from OSPF.
Route Prefix	*prefix*/*length prefix* **vpn** *vpn-id* List route information for the specified route prefix learned from OSPF. If you omit the prefix length, you must specify a VPN identifier so that the Cisco SD-WAN software can find the route that best matches the prefix.

Specific OSPF Route Type	*route-type* [*prefix*/*length*] List the information about entries for specific OSPF route types and optionally learned from the specified IP prefix. For a list of route types, see the Output Fields table below.
VPN-Specific Routes	**vpn** *vpn- id* List only the route table entries for the specified VPN.

Command History

Release	Modification
14.1.	Command introduced.

Examples

Show ospf routes

```
vEdge# show ospf routes

     ROUTE                                                          DEST                IF
VPN  TYPE      PREFIX              ID  AREA  COST  PATH TYPE   TYPE     NEXT HOP   NAME
-------------------------------------------------------------------------------------------
0    router    172.16.255.13/32    0   51    10    intra-area  router   10.0.5.13  ge0/2
0    network   10.0.5.0/24         0   51    10    intra-area  network  0.0.0.0    ge0/2
0    network   10.0.12.0/24        0   51    20    intra-area  network  10.0.5.13  ge0/2
0    network   10.1.14.0/24        0   51    20    intra-area  network  10.0.5.13  ge0/2
0    network   10.1.15.0/24        0   51    20    intra-area  network  10.0.5.13  ge0/2
0    network   10.1.16.0/24        0   51    20    intra-area  network  10.0.5.13  ge0/2
1    router    172.16.255.12/32    0   0     10    intra-area  router   10.2.2.12  ge0/0
1    router    172.16.255.21/32    0   0     20    intra-area  router   10.2.2.12  ge0/0
1    network   10.2.2.0/24         0   0     10    intra-area  network  0.0.0.0    ge0/0
1    network   10.2.3.0/24         0   0     20    intra-area  network  10.2.2.12  ge0/0
1    external  172.16.255.112/32   0   -     -     external2   network  10.2.2.12  ge0/0

vEdge# show ospf routes detail

     ROUTE                                                                  DEST          TYPE2
          IF
VPN  TYPE      PREFIX              ID  AREA  COST  FLAGS  PATH TYPE   TYPE     TAG  COST
NEXT HOP   NAME
-------------------------------------------------------------------------------------------------
0    router    172.16.255.13/32    0   51    10    2      intra-area  router   -    -
10.0.5.13  ge0/2
0    network   10.0.5.0/24         0   51    10    0      intra-area  network  -    -
0.0.0.0    ge0/2
0    network   10.0.12.0/24        0   51    20    0      intra-area  network  -    -
10.0.5.13  ge0/2
0    network   10.1.14.0/24        0   51    20    0      intra-area  network  -    -
10.0.5.13  ge0/2
0    network   10.1.15.0/24        0   51    20    0      intra-area  network  -    -
10.0.5.13  ge0/2
0    network   10.1.16.0/24        0   51    20    0      intra-area  network  -    -
10.0.5.13  ge0/2
1    router    172.16.255.12/32    0   0     10    2      intra-area  router   -    -
10.2.2.12  ge0/0
1    router    172.16.255.21/32    0   0     20    2      intra-area  router   -    -
10.2.2.12  ge0/0
1    network   10.2.2.0/24         0   0     10    0      intra-area  network  -    -
0.0.0.0    ge0/0
1    network   10.2.3.0/24         0   0     20    0      intra-area  network  -    -
```

```
10.2.2.12  ge0/0
1    external  172.16.255.112/32  0   -     -     83     external2   network  0    20
10.2.2.12  ge0/0
```

Related Topics

show ip routes, on page 303
show ospf database, on page 380
show ospf database-summary, on page 382
show ospf interface, on page 383
show ospf neighbor, on page 385
show ospf process, on page 386

show packet-capture

To view details of the packets captured, use the **show packet-capture** command in privileged EXEC mode.

show packet-capture [**details** [**interface** *interface-name* | **packets-captured** *packets* | **session-id** *session-id* | **vpn** *vpn-id*]]

Syntax Description

interface *interface-name*	(Optional) Name of the interface.
packets-captured *packets*	(Optional) Number of packets.
session-id *session-id*	(Optional) Session ID.
vpn *vpn-id*	(Optional) VPN ID.

Command Default

This command has no default behavior.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco SD-WAN Release 20.6.1	This command was introduced.

Example

Following is a sample output from the **show packet-capture** command using the keyword **details**.

```
Device# show packet-capture details
SESSION  PACKETS
VPN    INTERFACE       ID      CAPTURED   STATE
1  ipsec1 s123 59 Running
```

show packet-trace

To view detailed packet tracer statistics for the specified trace ID or summary statistics for all the filtered packets, up to 1024 records, use the **show packet-trace** command in privileged EXEC mode.

show packet-trace [**details** *trace-id*] [**statistics** [*trace-id* | **decision** *string* | **destination-ip** *ip-address* | **destination-interface** *interface* | **destination-port** *port* | **duration** *seconds* | **source-interface** *interface* | **source-ip** *ip-address* | **source-port** *port*]]

Syntax Description

details *trace-id*	(Optional) Displays packet trace details for the specified trace ID.
statistics	(Optional) Displays packet trace statistics for the parameter specified.
trace-id	(Optional) Displays packet statistics for the specified trace-id. Range: 0 to 1023.
decision *string*	(Optional) Displays packet drop/forward information.
destination-ip *ip-address*	(Optional) Displays packet trace statistics for the specified destination IPv4 address.
destination-interface *interface*	(Optional) Displays statistics for the specified destination-interface.
destination-port *port*	(Optional) Displays packet trace statistics for the specified destination port. Range: 0 to 65535.
duration *seconds*	(Optional) Displays packet trace statistics for the specified duration in µsecs.
source-interface *interface*	(Optional) Displays packet trace statistics for the specified source interface.
source-ip *ip-address*	(Optional) Displays packet trace statistics for the specified source IPv4 address.
source-port *port*	(Optional) Displays packet trace statistics for the specified source port. Range: 0 to 65535.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco SD-WAN Release 20.5.1	This command was introduced.

Example

This is the sample output for the show packet-trace details command, which is displayed for the specified trace ID 10.

```
Device# show packet-trace details 10
=============================================================================================
Pkt-id     src_ip(ingress_if)     dest_ip(egress_if)     Duration     Decision
=============================================================================================
10         10.1.15.15:0 (ge0_0)   192.168.255.5:0 (ge0_0)     15 us          PUNT
INGRESS_PKT:
01 00 5e 00 00 05 52 54 00 6b 4b fa 08 00 45 c0 00 44 f8 60 00 00 01 59 c7 2b 0a 01 0f 0f
e0
00 00 05 02 01 00 30 ac 10 ff 0f 00 00 00 33 8d 1b 00 00 00 00 00 00 00 00 00 00 ff ff ff
00 00 0a 02 00 00 00 00 28 0a 01 0f 0d 00 00 00 00 ac 10 ff 0d 00 00 00 00 00 00 00 00 00
00 00 00 00 00
EGRESS_PKT:
01 00 5e 00 00 05 52 54 00 6b 4b fa 08 00 45 c0 00 44 f8 60 00 00 01 59 c7 2b 0a 01 0f 0f
e0
00 00 05 02 01 00 30 ac 10 ff 0f 00 00 00 33 8d 1b 00 00 00 00 00 00 00 00 00 00 ff ff ff
00 00 0a 02 00 00 00 00 28 0a 01 0f 0d 00 00 00 00 ac 10 ff 0d 00 00 00 00 00 00 00 00 00
00 00 00 00 00
Feature Data
-------------------------------------
TOUCH : fp_proc_packet
-------------------------------------
TOUCH : fp_proc_packet2
-------------------------------------
TOUCH : fp_send_to_host
-------------------------------------
FP_TRACE_FEAT_PUNT_INFO:
icmp_type : 0
icmp_code : 0
qos : 7
-------------------------------------
TOUCH : fp_hw_x86_pkt_free
```

This is the sample output for the packet trace statistics command, which is displayed for the specified interface, in this case, for the loopback 0 interface.

```
Device# show packet-trace statistics source-interface loop0.0
packet-trace statistics 0
source-ip 10.1.15.13
source-port 0
destination-ip 192.168.255.5
destination-port 0
source-interface ge0_0
destination-interface ge0_0
decision PUNT
duration 40
```

This is the sample output for the packet tracer statistics command, which is displayed for the 10 records.

```
Device# show packet-trace statistics
TRACE            SOURCE  DESTINATION  DESTINATION  SOURCE    DESTINATION
 ID   SOURCE IP   PORT       IP         PORT      INTERFACE  INTERFACE  DECISION DURATION
-------------------------------------------------------------------------------------------
0     10.1.15.13   0    192.168.255.5    0        ge0_0       ge0_0      PUNT      40
1     10.1.15.15   0    192.168.255.5    0        ge0_0       ge0_0      PUNT      12
2     10.20.24.15  0    192.168.255.5    0        ge0_1       ge0_1      PUNT      66
3     10.1.15.13   0    192.168.255.5    0        ge0_0       ge0_0      PUNT      14
4     10.1.15.15   0    192.168.255.5    0        ge0_0       ge0_0      PUNT      11
5     10.20.24.15  0    192.168.255.5    0        ge0_1       ge0_1      PUNT      64
6     10.1.15.13   0    192.168.255.5    0        ge0_0       ge0_0      PUNT      14
7     10.1.15.15   0    192.168.255.5    0        ge0_0       ge0_0      PUNT      27
8     10.20.24.15  0    192.168.255.5    0        ge0_1       ge0_1      PUNT      97
9     10.1.15.13   0    192.168.255.5    0        ge0_0       ge0_0      PUNT      12
10    10.1.15.15   0    192.168.255.5    0        ge0_0       ge0_0      PUNT      15
```

Note Packet tracer displays statistics for up to 1024 records.

show parser dump

Display all CLI operational commands and their syntax.

show parser dump [*command-name*]

Syntax Description

None	Display all CLI operational commands and their syntax.
Command	*command-name* Display the specific CLI operational command or command hierarchy and the syntax of those commands.

Command History

Release	Modification
14.1.	Command introduced.

Examples

Show parser dump

```
vEdge# show parser dump
autowizard [true/false]
clear arp
clear arp WORD
clear arp WORD interface WORD
clear arp WORD interface WORD vpn WORD
clear arp WORD vpn WORD
clear arp WORD vpn WORD interface WORD
clear arp interface WORD
clear arp interface WORD WORD
clear arp interface WORD WORD vpn WORD
clear arp interface WORD vpn WORD
clear arp interface WORD vpn WORD WORD
clear arp vpn WORD
...
```

Related Topics

help, on page 81
show parser dump

show pim interface

List interfaces that are running PIM (on vEdge routers only).

show pim interface [**vpn** *vpn- id*]

Syntax Description

None	List standard information about interfaces that are running PIM.

VPN-Specific Interfaces	**vpn** *vpn-id* List only the PIM interfaces in the specified VPN.

Command History

Release	Modification
14.2.	Command introduced.

Examples

Show pim interface

```
vEdge# show pim interface

                                                                                JOIN
     IF                      NEIGHBOR  HELLO                                    PRUNE
VPN  NAME    IF ADDR         COUNT     INTERVAL  PRIORITY  DR ADDRESS  INTERVAL
-------------------------------------------------------------------------------------
1    ge0/0   10.2.2.11/24    1         30        1         10.2.2.12   60
1    ge0/5   10.0.9.11/24    1         30        1         10.0.9.14   60
1    ge0/6   10.0.10.11/24   1         30        1         10.0.10.14  60
```

Related Topics

clear pim interface, on page 50
clear pim neighbor, on page 51
clear pim protocol, on page 52
clear pim rp-mapping, on page 53
clear pim statistics, on page 54
show multicast replicator, on page 335
show multicast rpf, on page 337
show multicast topology, on page 338
show multicast tunnel, on page 339
show omp multicast-routes, on page 347
show pim neighbor, on page 395
show pim rp-mapping, on page 396
show pim statistics, on page 397

show pim neighbor

List PIM neighbors (on vEdge routers only).

show pim neighbor [**vpn** *vpn-id*]

Syntax Description

None	List standard information about PIM neighbors.

VPN-Specific Neighbors	**vpn** *vpn-id* List only the PIM neighbors in the specified VPN.

Command History

Release	Modification
14.2.	Command introduced.

Examples

Show pim neighbor

```
vEdge# show pim neighbor

                                                                    HOLD
VPN   IF NAME   NBR ADDR     UP TIME      EXPIRES      PRIORITY    TIME   DR ADDRESS
-------------------------------------------------------------------------------
1     ge0/0.1   10.0.9.11    0:08:19:01   0:00:01:44   1           105    10.0.9.14
1     ge0/1.1   10.0.10.11   0:08:19:01   0:00:01:44   1           105    10.0.10.14
2     ge0/0.2   20.0.9.11    0:08:19:01   0:00:01:44   1           105    20.0.9.14
2     ge0/1.2   20.0.10.11   0:08:19:01   0:00:01:44   1           105    20.0.10.14
```

Related Topics

clear pim interface, on page 50
clear pim neighbor, on page 51
clear pim rp-mapping, on page 53
clear pim statistics, on page 54
show multicast replicator, on page 335
show multicast rpf, on page 337
show multicast topology, on page 338
show multicast tunnel, on page 339
show omp multicast-routes, on page 347
show pim interface, on page 394
clear pim protocol, on page 52
show pim rp-mapping, on page 396
show pim statistics, on page 397

show pim rp-mapping

Display the mappings of multicast groups to RPs (on vEdge routers only).

show pim rp-mapping [**vpn** *vpn-id*]

Syntax Description

None	Display all group-to-RP mappings.
VPN	**vpn** *vpn-id* Display the group-to-RP mappings for a specific VPN.

Command History

Release	Modification
14.3.	Command introduced.

Examples

Show pim rp-mapping

```
vEdge# show pim rp-mapping

VPN  TYPE     GROUP          RP ADDRESS
---------------------------------------
1    Auto-RP  225.0.0.0/24   60.0.1.100
1    Auto-RP  226.0.0.0/24   59.0.1.100
2    Auto-RP  227.0.0.0/24   58.0.2.100
2    Auto-RP  228.0.0.0/24   57.0.2.100
```

Related Topics

clear pim interface, on page 50
clear pim neighbor, on page 51
clear pim protocol, on page 52
clear pim rp-mapping, on page 53
clear pim statistics, on page 54
show multicast replicator, on page 335
show multicast rpf, on page 337
show multicast topology, on page 338
show multicast tunnel, on page 339
show omp multicast-routes, on page 347
show pim interface, on page 394
show pim neighbor, on page 395
show pim statistics, on page 397

show pim statistics

Display all PIM-related statistics on the router (on vEdge routers only).

show pim statistics [**vpn** *vpn-id*]**show pim statistics** *parameter*

Syntax Description

None	Display all PIM statistics.
Specific Statistic	*parameter* Display the counters for a single PIM counter. *parameter* can be **assert-rx**, **assert-tx**, **auto-rp-announce-rx**, **auto-rp-mapping-rx**, **bad-rx**, **hello-rx**, **hello-tx**, **join-prune-rx**, **join-prune-tx**, **unknown-rx**, and **unsupported-rx**.

VPN	**vpn** *vpn-id*Display the PIM statistics in the specified VPN.

Command History

Release	Modification
14.2.	Command introduced.

Examples

Show pim statistics

```
vEdge# show pim statistics
VPN 1 STATISTICS
------------------------------------------
MESSAGE TYPE         RECEIVED          SENT
------------------------------------------
Hello                    2455          2528
Join-Prune                115            82
AutoRP Announce             0             -
AutoRP Mapping              0             -
Unsupported                 0             -
Unknown                     0             -
Bad                      1440             -
```

Related Topics

clear pim interface, on page 50
clear pim neighbor, on page 51
clear pim protocol, on page 52
clear pim rp-mapping, on page 53
clear pim statistics, on page 54
show multicast replicator, on page 335
show multicast rpf, on page 337
show multicast topology, on page 338
show multicast tunnel, on page 339

show omp multicast-routes, on page 347
show pim interface, on page 394
show pim neighbor, on page 395
show pim rp-mapping, on page 396

show platform resources

Table 9: Feature History

Feature Name	Release Information	Description
Crypto Utilization in Show Platform Resources Command	Cisco IOS XE Catalyst SD-WAN Release 17.4.1a	This feature adds information about crypto utilization to the **show platform resources** command on the supported routers.

To monitor system resources, including crypto utilization, use the **show platform resources** command in privileged EXEC mode.

show platform resources

Syntax Description

This command has no arguments or keywords.

Command Default

No default behavior or values.

Command Modes

Privileged EXEC

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.4.1a	The command is modified. The command output is enhanced to include crypto-utilization information on the supported routers.

Usage Guidelines

Crypto utilization is displayed only for the following supported routers:

- Cisco ASR 1000-ESP100 - CN6870 (15-13063-01)
- Cisco ASR 1000-ESP200 - 2x CN6880 (15-13062-01)
- Cisco ASR 1001-X - CN6645 (15-14203-01)
- Cisco ASR 1002-X - CN6335 (15-13267-01)
- Cisco ASR 1001-HX - CN6870-800 (15-13063-01)
- Cisco ASR 1002-HX - CN6880-1200 (15-13062-01)
- Cisco ASR1000-ESP100-X
- Cisco ASR 1000-ESP200-X
- Cisco Catalyst 8500-12X
- Cisco Catalyst 8500-12X4QC

Note Some of the supported routers above have a "- CN6XXX" designation trailing the Cisco product name, indicating the part number of the particular Cavium/Marvell network processor used.

The following is a sample output from the **show platform resources** command that is run on a Cisco ASR 1000 Series router:

```
# show platform resources
**State Acronym: H - Healthy, W - Warning, C - Critical
Resource                Usage                Max              Warning         Critical        State
-------------------------------------------------------------------------------------------------
RP0 (ok, active)                                                                              H
 Control Processor      1.45%                100%             80%             90%             H
  DRAM                  2979MB(18%)          15912MB          88%             93%             H
  bootflash             968MB(52%)           1858MB           88%             93%             H
  harddisk              6453MB(8%)           75058MB          88%             93%             H
ESP0(ok, active)                                                                              H
 Control Processor      3.05%                100%             80%             90%             H
  DRAM                  1037MB(13%)          7861MB           88%             93%             H
 QFP                                                                                          H
  TCAM                  14cells(0%)          524288cells      65%             85%             H
  DRAM                  108655KB(10%)        1048576KB        85%             95%             H
  IRAM                  13013KB(9%)          131072KB         85%             95%             H
  CPU Utilization       0.00%                100%             90%             95%             H
  Crypto Utilization    0.00%                100%             90%             95%             H
  Pkt Buf Mem           2003KB(0%)           262144KB         85%             95%             H
SIP0                                                                                          H
 Control Processor      1.50%                100%             80%             90%             H
  DRAM                  518MB(55%)           941MB            88%             93%             H
```

show platform software trace level

To view the binary trace levels for the modules of a Cisco SD-WAN process executing on a specific hardware slot, issue the command **show platform software trace level** in the Privileged EXEC mode.

show platform software trace level *process* *slot*

Syntax Description

process	Specify a Cisco SD-WAN process. For the list of Cisco SD-WAN processes for which binary trace is supported see the table 'Supported Cisco SD-WAN Daemons' under 'Usage Guidelines'.
slot	Hardware slot from which process messages must be logged.

Command Default None

Command Modes Privileged EXEC

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.4.1a	Support introduced for select Cisco SD-WAN processes. See the table 'Supported Cisco SD-WAN Daemons' under 'Usage Guidelines'.

Usage Guidelines

Table 10: Supported Cisco SD-WAN Daemons

Cisco SD-WAN Daemons	Supported from Release
• fpmd • ftm • ompd • vdaemon • cfgmgr	Cisco IOS XE Catalyst SD-WAN Release 17.4.1a

Example

```
Device# show platform software trace level fpmd r0
Module Name                      Trace Level
-----------------------------------------------
binos                            Notice
bipc                             Notice
btrace                           Notice
btrace_ra                        Notice
bump_ptr_alloc                   Notice
cdllib                           Notice
chasfs                           Notice
chmgr_api                        Notice
config                           Notice
cyan                             Notice
dassist                          Notice
dbal                             Notice
dpi                              Notice
evlib                            Notice
evutil                           Notice
file_alloc                       Notice
flash                            Notice
fpmd                             Notice
green-be                         Notice
ios-avl                          Notice
mqipc                            Notice
policy                           Notice
prelib                           Notice
procstlib                        Notice
service-dir                      Notice
services                         Notice
syshw                            Notice
tdl_cdlcore                      Notice
tdl_dbal_root                    Notice
tdl_mem_stats_ui                 Notice
tdl_og_config                    Notice
tdl_plat_main                    Notice
tdl_plat_trail                   Notice
tdl_sdwan_policy                 Notice
```

```
tdl_service_directory           Notice
tdl_tdl_toc                     Notice
tdl_ui                          Notice
tdl_uipeer_comm_ui              Notice
tdlgc                           Notice
tdllib                          Notice
trans_avl                       Notice
trans_gbt                       Notice
ttm                             Notice
uihandler                       Notice
uipeer                          Notice
uistatus                        Notice
vconfd                          Notice
vipcommon                       Notice
vista                           Notice
vs_flock                        Notice
```

show policer

Display information about the policers that are in effect (on vEdge routers only).

show policer [**burst** *bytes*] [**oos-action** *action*] [**oos-pkts** *number*] [**rate** *bps*]

Syntax Description

None	Display information about all policers.
Specific Burst Size	**burst** *bytes* Display information about policers that match the specified burst size.*Range:* 0 through 2^{64} – 1 bytes
Specific Out-of-Specification Action	**oos-action** *action* Display information about policers that match the specified OOS action. A policed packet is out of specification when the policer does not allow it to pass. Depending on the policer configuration, these packets are either dropped or they are remarked, which sets the packet loss priority (PLP) value on the egress interface to high.*Action:* **drop**, **remark**
Specific Out-of-Specification Packet Count	**oos-pkts** *number* Display information about policers that match the specified OOS packet count.*Range:* 0 through 2^{64} – 1
Specific Bandwidth	**rate** *bps* Display information about policers that match the specified bandwidth.*Range:* 0 through 2^{64} – 1 bps

Command History

Release	Modification
14.1.	Command introduced.
16.3	Added **burst**, **oos-action**, **oos-pkts**, and **rate** options.

Examples

Display the policers that are in effect on the router:

Show policer

```
vEdge# show policer
                                                          OOS      OOS
NAME       INDEX  DIRECTION  RATE          BURST  ACTION   PKTS
-----------------------------------------------------------------
ge0_0_llq  10     out        200000000000  15000  drop     0
ge0_3_llq  11     out        200000000000  15000  drop     0
```

Related Topics

clear policer statistics, on page 55
show policy data-policy-filter, on page 406
show policy from-vsmart, on page 409

show policy access-list-associations

Display the IPv4 access lists that are operating on each interface (on vEdge routers only).

show policy access-list-associations [*access-list-name*]

Syntax Description

None	Display all access lists operating on the vEdge router's interfaces.
Specific Access List	*access-list-name* Display the interfaces on which the specific access list is operating.

Command History

Release	Modification
14.1.	Command introduced.

Examples

Show policy access-list-associations

```
vEdge# show running-config policy
policy
 access-list ALLOW_OSPF_PACKETS
  sequence 65535
   match
    protocol 89
   !
   action accept
    count count_OSPF_PACKETS
   !
  !
  default-action accept
 !
!
```

```
vEdge# show policy access-list-associations

                    INTERFACE  INTERFACE
NAME                NAME       DIRECTION
-----------------------------------------
ALLOW_OSPF_PACKETS  ge0/0      in
```

Related Topics

access-list
show ipv6 policy access-list-associations, on page 320
show policy access-list-counters, on page 403
show policy access-list-names, on page 404
show policy access-list-policers, on page 405
show policy data-policy-filter, on page 406

show policy access-list-counters

Display the number of packets counted by IPv4 access lists configured on the vEdge router (on vEdge routers only).

show policy access-list-counters [*access-list-name*]

Syntax Description

None	Display the count of packets that have been collected by all data policies on the local vEdge router.
Specific Access List	*access-list-name* Display the count of packets that have been collected by the specified data policy on the local vEdge router.

Command History

Release	Modification
14.1.	Command introduced.

Examples

Show policy access-list-counters

```
vEdge# show running-config policy
policy
 access-list ALLOW_OSPF_PACKETS
  sequence 65535
   match
    protocol 89
   !
   action accept
    count count_OSPF_PACKETS
   !
  !
  default-action accept
```

```
 !
!
vEdge# show policy access-list-counters

NAME                 COUNTER NAME         PACKETS  BYTES
------------------------------------------------------------
ALLOW_OSPF_PACKETS   count_OSPF_PACKETS   1634     135940
```

Related Topics

access-list
show ipv6 policy access-list-counters, on page 321
show policy access-list-associations, on page 402
show policy access-list-names, on page 404
show policy access-list-policers, on page 405
show policy data-policy-filter, on page 406

show policy access-list-names

Display the names of the IPv4 access lists configured on the vEdge router (on vEdge routers only).

show policy access-list-names

Syntax Description

Syntax Description

None

Command History

Release	Modification
14.1.	Command introduced.

Examples

Show policy access-list-names

```
vEdge# show running-config policy
policy
 access-list ALLOW_OSPF_PACKETS
  sequence 65535
   match
    protocol 89
   !
   action accept
    count count_OSPF_PACKETS
   !
  !
  default-action accept
 !
!
vEdge# show policy access-list-names

NAME
```

```
--------------------
ALLOW_OSPF_PACKETS
```

Related Topics

access-list
show ipv6 policy access-list-names, on page 322
show policy access-list-associations, on page 402
show policy access-list-counters, on page 403
show policy access-list-policers, on page 405
show policy data-policy-filter, on page 406

show policy access-list-policers

Display information about the policers configured in IPv4 access lists (on vEdge routers only).

show policy access-list-policers

Syntax Description

None

Command History

Release	Modification
14.1	Command introduced.
16.2.5	Add the policy sequence number to the policer name.

Example

Display a list of policers configured in access lists. This output shows that the policer named "p1_police" was applied in sequence 10 in the access list "acl_p1" in sequences 10, 20, and 30 in the "acl_plp" access list.

```
vEdge# show policy access-list-policers
                                    OOS
NAME                POLICER NAME    PACKETS
-------------------------------------------
acl_p1              10.p1_police    0
acl_plp             10.p1_police    0
                    20.p1_police    0
                    30.p2_police    0
```

Related Topics

clear policer statistics, on page 55
show ipv6 policy access-list-policers, on page 323
show policer, on page 401

show policy data-policy-filter

Display information about data policy filters for configured counters and policers, and for out-of-sequence packets (on vEdge routers only).

show policy data-policy-filter

Syntax Description

None

Command History

Release	Modification
14.1	Command introduced.
16.2.5	Add the policy sequence number to the policer name
17.1	Add out-of-specification bytes (OOS Btytes) column to command output.

Examples

Example 1

Display the number of packets and bytes for four configured data policy counters:

```
vSmart# show running-config policy data-policy
policy
 data-policy Local-City-Branch
   vpn-list-Guest-VPN
    sequence 10
      action accetp
        count Guest-Wifi-Traffic
        cflod
      !
    !
    default-action accept
  !
  vpn-list Service-VPN
    sequence 10
      match
        destination-data-prefix-list Business-Prefixes
        destination-port 80
      !
      action accept
        count Business-Traffic
        cflowd
      !
    !
    sequence 20
      match
        destination-port 10090
        protocol 6
      !
      action accept
        count Other-Branch-Traffic
        cflowd
      !
    !
```

```
    sequence 30
      action accept
        count Misc-Traffic
        cflowd
      !
    !
    default-action accept
  !
!

vEdge# show policy data-policy-filter
                                                                                                POLICER     OOS       OOS
NAME                      NAME         COUNTER NAME           PACKETS     BYTES               NAME        PACKETS   BYTES
-------------------------------------------------------------------------------------------------------------------------
Local-City-Branch         Guest-VPN    Guest-Wifi-Traffic     18066728    12422330320
                          Service-VPN  Business-Traffic       92436       7082643
                                       Other-Branch-Traffic   1663339139  163093277861
                                       Misc-Traffic           32079661    5118593007
```

Example 2

Display packet information for policers. This output shows that the policer named "police" was applied in sequences 10, 20, and 30 in the data policy "dp1" and in sequence 10 in the "dp2" data policy.

```
vEdge# show policy data-policy-filter
                                                        POLICER     OOS       OOS
NAME        NAME         COUNTER NAME    PACKETS  BYTES NAME        PACKETS   BYTES
-------------------------------------------------------------------------------------
dp1         vpn_1_list   police_count    0        0
                         police_count20  0        0     10.police   0
                                                        20.police   0
                                                        30.police   0
dp2         vpn_1_list                                  10.police   0
```

Example 3

For a data policy that includes a policer, display the policers:

```
vEdge# show policy from-vsmart
from-vsmart data-policy dp1
 direction from-service
 vpn-list vpn_1_list
  sequence 10
   match
    protocol 1
   action accept
    count police_count
    set
     policer police
  sequence 20
   action accept
    count police_count20
    set
     policer police
  sequence 30
   action accept
    set
     policer police
  default-action accept
from-vsmart policer police
 rate   10000000
 burst  1000000
```

```
 exceed remark
from-vsmart lists vpn-list vpn_1_list
 vpn 1

vEdge# show policy data-policy-filter

                                                    POLICER     OOS       OOS
NAME  NAME        COUNTER NAME    PACKETS  BYTES    NAME        PACKETS   BYTES
-------------------------------------------------------------------------------
dp1   vpn_1_list  police_count    0        0
                  police_count20  0        0        10.police   0
                                                    20.police   0
                                                    30.police   0
```

Related Topics

clear policer statistics, on page 55
show ipv6 policy access-list-policers, on page 323
show policer, on page 401
show policy from-vsmart, on page 409

show policy ef-stats

To display elephant-flow statistics, use the **show policy ef-stats** command in privileged exec mode.

show policy ef-stats

Syntax Description

ef-stats	Displays elephant-flow statistics.

Command Default

This command has no default behavior.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco SD-WAN Release 20.9.1	This command was introduced.

Examples

The following is a sample output from the **show policy ef-stats** command:

```
vEdge2k# show policy ef-stats
-------------------------------------------------------------------------------------------------

                                ADD
      ADD    DEL    CUR    SUPER                                                          CUR
CORE  SUPER  SUPER  SUPER  BLOCK   ADD   DEL   CUR   SCAN     EF   CUSTOM  HASH       CPU
NUM   BLOCK  BLOCK  BLOCK  FAILED  FLOW  FLOW  FLOW  COUNTER  NUM  MATCH   COLLISION  USAGE
-------------------------------------------------------------------------------------------------
2     1      0      1      0       0     0     0     20523    0    0       0          00.04
3     1      0      1      0       1     0     1     20523    0    0       0          00.01
4     1      0      1      0       0     0     0     20523    0    0       0          00.00
5     1      0      1      0       0     0     0     20523    0    0       0          00.01
6     1      0      1      0       0     0     0     20523    0    0       0          00.01
7     1      0      1      0       0     0     0     20523    0    0       0          00.01
```

```
8     1     0     1     0     0     0     0     20523     0     0     0          00.02
9     1     0     1     0     1     0     1     20523     0     0     0          00.02
10    1     0     1     0     0     0     0     20523     0     0     0          00.01
11    1     0     1     0     0     0     0     20523     0     0     0          00.01
12    1     0     1     0     0     0     0     20523     0     0     0          00.00
13    1     0     1     0     1     0     1     20523     0     0     0          00.01
14    1     0     1     0     0     0     0     20523     0     0     0          00.01
15    1     0     1     0     0     0     0     20523     0     0     0          00.01
16    1     0     1     0     0     0     0     20523     0     0     0          00.02
17    1     0     1     0     0     0     0     20523     0     0     0          00.00
18    1     0     1     0     0     0     0     20523     0     0     0          00.01
19    1     0     1     0     0     0     0     20523     0     0     0          00.01
20    1     0     1     0     0     0     0     20523     0     0     0          00.01
```

Table 11: show policy ef-stats Field Descriptions

Field	Description
CORE NUM	Core Number
EF NUM	Number of elephant flows identified at present.
CUSTOM MATCH	Number of elephant flows identified at present because of a matched sequence.
CUR CPU USAGE	Current CPU usage.

show policy from-vsmart

Display a centralized data policy, an application-aware policy, or a cflowd policy that a vSmart controller has pushed to the vEdge router (on vEdge routers only). The vSmart controller pushes the policy via OMP after it has been configured and activated on the controller.

show policy from-vsmart

show policy from-vsmart [**app-route-policy**] [**cflowd-template** [*template-option*]] [**data-policy**] [**lists** (**data-prefix-list** | **vpn-list**)] [**policer**] [**sla-class**]

Syntax Description

None	None: Display all the data policies that the vSmart controller has pushed to the vEdge router.
app-route-policy	Application Route Policies: Display only the application-aware routing policies that the vSmart controller has pushed to the vEdge router.
cflowd-template [*template-option*]	cflowd Templates: Display only the cflowd template information that that vSmart controller has pushed to the vEdge router. *template-option* can be one of **collector**, **flow-active-timeout**, **flow-inactive-timeout**, and **template-refresh**.
data-policy	Data Policies: Display only the data policies that the vSmart controller has pushed to the vEdge router.

lists (**data-prefix-list** | **vpn-list**)	Lists: Display only the policy-related lists that the vSmart controller has pushed to the vEdge router.
policer	Policers: Display only the policers that the vSmart controller has pushed to the vEdge router.
sla-class	SLA Classes: Display only the SLA classes for application-aware routing that the vSmart controller has pushed to the vEdge router.

Command History

Release	Modification
14.1	Command introduced.
14.2	Command renamed from **show omp data-policy** to **show policy from-vsmart**.
14.3	**cflowd-template** option added.

Examples

Example 1

```
vEdge# show policy from-vsmart
from-vsmart sla-class test_sla_class
 latency 50
from-vsmart app-route-policy test_app_route_policy
 vpn-list vpn_1_list
  sequence 1
   match
    destination-ip 10.2.3.21/32
   action
    sla-class test_sla_class
    sla-class strict
  sequence 2
   match
    destination-port 80
   action
    sla-class test_sla_class
    no sla-class strict
  sequence 3
   match
    destination-data-prefix-list test_data_prefix_list
   action
    sla-class test_sla_class
    sla-class strict
  sequence 4
   match
    source-port 8000
   action
    sla-class test_sla_class
    no sla-class strict
  sequence 5
   match
    dscp 10
   action
    count app-route-dscp
```

```
    sla-class test_sla_class
    no sla-class strict
  sequence 7
   match
    protocol 6
   action
    sla-class test_sla_class
    sla-class strict
  sequence 8
   match
    protocol 17
   action
    sla-class test_sla_class
    no sla-class strict
  sequence 9
   match
    protocol 1
   action
    count app-route-icmp
    sla-class test_sla_class
    sla-class strict
from-vsmart lists vpn-list vpn_1_list
 vpn 1
 vpn 102
from-vsmart lists data-prefix-list test_data_prefix_list
 ip-prefix 10.1.1.0/8
```

Example 2

```
vEdge# show policy from-vsmart cflowd-template
from-vsmart cflowd-template test-cflowd-template
 flow-active-timeout   30
 flow-inactive-timeout 30
 template-refresh      30
 collector vpn 1 address 172.16.255.15 port 13322
vm5# show policy from-vsmart cflowd-template collector
from-vsmart cflowd-template test-cflowd-template
 collector vpn 1 address 172.16.255.15 port 13322
```

Related Topics

cflowd-template
policy
show app cflowd template, on page 167
show policy data-policy-filter, on page 406

show policy qos-map-info

Display information about the QoS maps are applied to each interface (on vEdge routers only).

show policy qos-map-info [*map-name*]

Syntax Description

None	Display information for all QoS maps.
[*map-name*]	Specific Map: Display information for a specific QoS map.

Command History

Release	Modification
14.1	Command introduced.

Example

```
vEdge# show policy qos-map-info
               INTERFACE
QOS MAP NAME   NAME
--------------------------
my_qos_map     ge1/0
               ge1/3
               ge2/0
               ge2/1
```

Related Topics

show policy qos-scheduler-info, on page 412

show policy qos-scheduler-info

Display information about the configured QoS schedulers and the associated QoS map (on vEdge routers only).

show policy qos-scheduler-info [*scheduler-name*]

Syntax Description

None	Display information for all configured QoS schedulers.
scheduler-name	Specific Scheduler: Display information for a specific QoS scheduler.

Command History

Release	Modification
14.1	Command introduced.

Example

```
vEdge# show policy qos-scheduler-info
QOS SCHEDULER       BANDWIDTH  BUFFER
NAME                PERCENT    PERCENT  QUEUE  QOS MAP NAME
-------------------------------------------------------------
VOICE               50         50       0      my_qos_map
DEFAULT             12         12       7      my_qos_map
BULK-DATA           5          5        6      my_qos_map
NETWORK-CONTROL     3          3        3      my_qos_map
STREAMING-VIDEO     3          3        2      my_qos_map
VOICE-SIGNALLING    3          3        3      my_qos_map
BUSINESS-CRITICAL   12         12       4      my_qos_map
```

```
INTERACTIVE-VIDEO   5          5        1      my_qos_map
TRANSACTIONAL-DATA  7          7        5      my_qos_map
```

Related Topics

show policy qos-map-info, on page 411

show policy service-path

Determine the next-hop information for an IP packet that a vEdge router sends out a service-side interface (on vEdge routers only). You identify the IP packet by specifying fields in the IP header. You can use this command when using application-aware routing, to determine that path taken by the packets associated with a DPI application.

show policy service-path vpn-id *vpn-id* **interface** *interface-name* **source-ip** *ip-address* **dest-ip** *ip-address* **protocol** *number* **source-port** *port-number* **dest-port** *port-number* [**all** | **app** *application-name* | **dscp** *value*]

Syntax Description

all	All Possible Paths: Display all possible paths for a packet.
dest-ip *ip-address* **dest-port** *port-number*	Destination IP Address and Port Number: IP address and port number of the remote end of the IPsec tunnel.
app *application-name*	DPI Application: Display the packets associated with the specified DPI application.
dscp *value*	DSCP Value: DSCP value being used on the IPsec tunnel.*Range:* 0 through 63
interface *interface-name*	Interface: Name of the local interface being used for the IPsec tunnel.
protocol *number*	Protocol: Number of the protocol being used on the IPsec tunnel.
source-ip *ip-address* **source-port** *port-number*	Source IP Address and Port Number: IP address and port number of the local end of the IPsec tunnel.
vpn-id *vpn-id*	VPN: Identifier of the service VPN.

Command History

Release	Modification
15.1	Command introduced.
15.3	**all** and **app** options added.

Example

```
vEdge# show policy service-path vpn 0 interface ge0/0 source-ip 172.0.101.15
dest-ip 172.0.101.16 protocol 1 source-port 1 dest-port 1 all
Number of possible next hops: 1
```

```
Next Hop: Svc_GRE
Source: 10.1.15.15 Destination: 10.1.16.16
```

Related Topics

show app-route sla-class, on page 182
show app-route stats, on page 183
show ip fib, on page 292
show ip routes, on page 303
show policy tunnel-path, on page 414

show policy tunnel-path

Determine the next-hop information for an IP packet that a vEdge router sends out a WAN transport tunnel interface (on vEdge routers only). You identify the IP packet by specifying fields in the IP header. You can use this command when using application-aware routing, to determine that path taken by the packets associated with a DPI application.

show policy service-path vpn-id *vpn-id* **interface** *interface-name* **source-ip** *ip-address* **dest-ip** *ip-address* **protocol** *number* **source-port** *port-number* **dest-port** *port-number* [**all** | **app** *application-name* | **dscp** *value*]

Syntax Description

all	All Possible Paths: Display all possible paths for a packet.
dest-ip *ip-address* **dest-port** *port-number*	Destination IP Address and Port Number: IP address and port number of the remote end of the IPsec tunnel.
app *application-name*	DPI Application: Display the packets associated with the specified DPI application.
dscp *value*	DSCP Value: DSCP value being used on the IPsec tunnel.
interface *interface-name*	Interface: Name of the local interface being used for the IPsec tunnel.
protocol *number*	Protocol: Number of the protocol being used on the IPsec tunnel.
source-ip *ip-address* **source-port** *port-number*	Source IP Address and Port Number: IP address and port number of the local end of the IPsec tunnel.
vpn-id *vpn-id*	VPN: Identifier of the transport VPN.

Command History

Release	Modification
15.2	Command renamed from **show app-route path** and introduced.
15.3	**all** and **app** options added.

Example

```
vEdge# show policy tunnel-path vpn 0 interface ge0/2 source-ip 10.0.5.11 dest-ip 10.0.5.21
 protocol 6
source-port 12346 dest-port 12346
Nexthop: Direct
Interface ge0/2 index: 3
```

Related Topics

show app-route stats, on page 183
show app-route sla-class, on page 182
show policy service-path, on page 413

show policy zbfw filter-statistics

Display a count of the packets that match a zone-based firewall's match criteria and the number of bytes that match the criteria (on vEdge routers only).

show policy zbfw filter-statistics

Syntax Description

None

Command History

Release	Modification
18.2	Command introduced.

Example

For the configured zone-based firewalls, display the number of packets and the number of bytes that match the match criteria in the firewalls:

```
vEdge# show policy zbfw filter-statistics

NAME           COUNTER NAME    PACKETS  BYTES
-----------------------------------------------
ZONE-POLICY-1  counter_seq_1  2        196
```

Related Topics

clear policy zbfw filter-statistics, on page 56
clear policy zbfw global-statistics, on page 57

show policy zbfw global-statistics

Display statistics about the packets processed by zone-based firewalls (on vEdge routers only).

show policy zbfw global-statistics

Syntax Description

None

Command History

Release	Modification
18.2	Command introduced.

Example

Display statistics about packets that the router has processed with zone-based firewalls:

```
vEdge# show policy zbfw global-statistics
         Total zone-based firewall packets   : 0
        Fragments                           : 0
        Fragment failures                   : 0
        State check failures                : 0
        Flow addition failures              : 0
        Unsupported protocol                : 0
        Number of flow entries              : 0
        Exceeded maximum TCP half-open      : 0
        Mailbox message full                : 0

        Packets Implicitly Allowed          :
          No pair in same zone              : 0
          No-zone-to-no-zone packets        : 0
          Zone-to-no-zone internet          : 0

          TCP Stats                         :
            TCP retransmitted segments      : 0
            TCP out-of-order segments       : 0

        Packets Implicitly Dropped          :
          During policy change              : 0
          Invalid filter                    : 0
          No pair for different zone        : 0
          Zone-to-no-zone packets           : 0
          Zone-to-no-zone internet          : 0

          TCP Drops                         :
            Internal invalid tcp state      : 0
            Stray seg                       : 0
            Invalid flags                   : 0
            Syn with data                   : 0
            Invalid win scale option        : 0
            Invalid seg synsent state       : 0
            Invalid ack num                 : 0
            Invalid ack flag                : 0
            Reset to Responder              : 0
            Retrans invalid flags           : 0
            Reset in window                 : 0
            Invalid sequence number         : 0
            Invalid seg synrcvd state       : 0
            Syn in window                   : 0
            Unexpected TCP payload          : 0
            Invalid seg pkt too old         : 0
            Invalid seg pkt win overflow    : 0
            Invalid seg pyld after fin send : 0
```

```
No syn in listen state          : 0
Internal TCP invalid direction  : 0
```

Table 12: Statistics Information

Statistics	Description
Total zone-based firewall packets	The total number of packets passing through firewall.
Self zone packets	Packets that are directed to/going out from the router (not pass through traffic).
Fragments	Packet Fragments counter.
Fragment failures	Failure to reassemble fragments.
State check failures	Any TCP state check failures found during flow add or flow inspect process, will be counted towards this counter.
Fragment state check failures	For fragmented packets, if the first packet has failed state check and dropped, drop other fragments and increment the counter.
Flow addition failures	Failed to add a flow record for a given traffic flow.
Unsupported protocol	Packets where the protocol number not supported by firewall.
Number of flow entries	Points to the number of sessions created.
Exceeded maximum TCP half-open	After the max half open TCP connections have reached (which is set by tcp-syn-flood-limit), this counter gets incremented.
Mailbox message full	SMTP 554, mailbox full.
No pair in same zone	Packets belonging to same zones and no zone pair. Basically packets across interfaces belonging to same zone.
No-zone-to-no-zone packets	None of the VPN's (source/destination) are part of any zones, then allow the packets to go through.
Zone-to-no-zone internet	When one VPN is part of a zone, and other VPN is a Internet VPN0 AND its not part of the zone, then if "zone-to-nozone-internet" is **allow**, this counter will be incremented.
Umbrella registration packets	Initial Umbrella registration packets.
No pair Self zone packets	If no zone pair found and if its a self-zone packet allow the packet.
TCP retransmitted segments	TCP retransmitted segments.
TCP out-of-order segments	Out of order segments that arrive during ESTAB, CLOSEWAIT OR LASTACK, are allowed implicitly.
During policy change	Packets dropped during policy change due to reconfig.
Invalid filter	No longer a valid policy filter, then increment this counter.

Statistics	Description
No pair for different zone	No zone pair between different zones, then drop the packet and increment the counter.
Zone-to-no-zone packets	All traffic from Zone to a No-Zone will be dropped.
Zone-to-no-zone internet	When one VPN is part of a zone, and other VPN is a Internet VPN0 AND its not part of the zone, then if "zone-to-nozone-internet" is **deny**, this counter will be incremented.
Internal invalid tcp state	If the TCP state check for the flow, does not match any of the valid states such as LISTEN, SYNSENT, SYNRCVD, ESTABLISHED, CLOSEWAIT, LASTACK OR TIMEWAIT.
Stray seg	A TCP segment is received that should not have been received through the TCP state machine such as a TCP SYN packet being received in the listen state from the responder.
Invalid flags	This can be caused by: **1.** During LISTEN state, a TCP peer receives a RST or an ACK **2.** Expected SYN/ACK is not received from the responder. **3.** TCP initial SYN packet has flags other than SYN.
Syn with data	If the SYN packet contains payload for some reason, then drop the packet.
Invalid win scale option	Caused by incorrect window scale option byte length.
Invalid seg synsent state	An invalid TCP segment in SYNSENT state is caused by: **1.** SYN/ACK has payload. **2.** SYN/ACK has other flags (PSH, URG, FIN) set. **3.** Receive a non-SYN packet from initiator.
Invalid ack numif	This drop could be caused by one of these reasons: **1.** ACK not equals to the next_seq# of the TCP peer. **2.** ACK is greater than the most recent SEQ# sent by the TCP peer.
Invalid ack flag	Drop the packet if **1.** Expecting ACK flag , but not set during different TCP states. **2.** ACK flag is set and other flags (such as RST) is set.
Reset to Responder	Send RST to responder in SYNSENT state when ACK# is not equal to ISN+1.
Retrans invalid flags	If this is retransmitted packet and already ACKed drop the packet.

Statistics	Description
Reset in window	A RST packet is observed within the window of an already established TCP connection.
Invalid sequence number	In SYNRCVD state, drop the packet if, • If Seq number is less than ISN • If receiver window is zero, then drop any segment with Data and drop any out-of-order segments. • If receiver window is non-zero, then drop any segment whose SEQ falls beyond the window.
Invalid seg synrcvd state	In SYNRCVD state, drop the packet if, receive a retransit SYN with payload from initiator.
Syn in window	If a SYN is received in an already established connection, then drop the packet.
Unexpected TCP payload	In SYNRCVD state, if a packet with payload from responder to initiator direction is received, drop the packet.
Invalid seg pkt too old	Packet is too old - one window behind the other side's ACK. This could happen in ESTABLISHED, CLOSEWAIT and LASTACK state.
Invalid seg pkt win overflow	This occurs when incoming segment size overflows receiver's window. This check is done during TCP ESTAB, CLOSEWAIT and LASTACK state processing.
Invalid seg pyld after fin send	Payload received after FIN sent. This could happen in CLOSEWAIT state.
No syn in listen state	During TCP LISTEN state processing, if the packet received is not SYN packet, then drop the packet.
Internal TCP invalid direction	Packet direction undefined.

Related Topics

clear policy zbfw global-statistics, on page 57

show policy zbfw sessions

Display the session flow information for all zone pairs configured with a zone-based firewall policy (on vEdge routers only).

show policy zbfw sessions

Syntax Description

None

Command History

Release	Modification
18.2	Command introduced.

Example

For the configured zone-based firewalls, display the number of packets and the number of bytes that match the match criteria in the firewalls:

```
vEdge# show policy zbfw sessions

ZONE PAIR      SOURCE IP    DESTINATION  SOURCE  DESTINATION           SOURCE  DESTINATION  IDLE        OUTBOUND  OUTBOUND  INBOUND  INBOUND  FILTER
NAME      VPN  ADDRESS      IP ADDRESS   PORT    PORT          PROTOCOL  VPN     VPN          TIMEOUT     PACKETS   OCTETS    PACKETS  OCTETS   STATE
-------------------------------------------------------------------------------------------------------------------------------------------------
zp1       1    10.20.24.17  10.20.25.18  44061   5001          TCP       1       1            0:00:59:59  12552     17581337  6853     463590   established
zp1       1    10.20.24.17  10.20.25.18  44062   5001          TCP       1       1            0:01:00:00  10151     14217536  5561     375290   established
zp1       1    10.20.24.17  10.20.25.18  44063   5001          TCP       1       1            0:00:59:59  7996      11198381  4262     285596   established
zp1       1    10.20.24.17  10.20.25.18  44064   5001          TCP       1       1            0:00:59:59  7066      9895451   3826     257392   established
zp1       1    10.20.24.17  10.20.25.18  44065   5001          TCP       1       1            0:00:59:59  13471     18868856  7440     504408   established
zp1       1    10.20.24.17  10.20.25.18  44066   5001          TCP       1       1            0:00:59:59  8450      11834435  4435     295718   established
```

Related Topics

clear policy zbfw sessions, on page 57

show ppp interface

Display PPP interface information (on vEdge routers only).

show ppp interface

Syntax Description

None

Command History

Release	Modification
15.3.3	Command introduced.
17.1	Add Auth Type field to command output.

Example

```
vEdge# show ppp interface

                PPPOE       INTERFACE                  PRIMARY   SECONDARY         AUTH
VPN   IFNAME    INTERFACE   IP          GATEWAY IP     DNS       DNS          MTU  TYPE
-------------------------------------------------------------------------------------
0     ppp10     ge0/1       11.1.1.1    115.0.1.100    8.8.8.8   8.8.4.4      1150 pap
```

Related Topics

clear pppoe statistics, on page 58

show pppoe session

Display PPPoE session information (on vEdge routers only).

show pppoe session

Syntax Description

None

Command History

Release	Modification
15.3.3	Command introduced.

Example

```
vEdge# show pppoe session

             SESSION                                          PPP                    SERVICE

VPN   IFNAME   ID       SERVER MAC         LOCAL MAC          INTERFACE  AC NAME     NAME

-------------------------------------------------------------------------------------------
0     ge0/1    1        00:0c:29:2e:20:1a  00:0c:29:be:27:f5  ppp1       branch100  -

0     ge0/3    1        00:0c:29:2e:20:24  00:0c:29:be:27:13  ppp2       branch100  -
```

Related Topics

clear pppoe statistics, on page 58
show ppp interface, on page 420
show pppoe statistics, on page 421

show pppoe statistics

Display statistics for PPPoE sessions (on vEdge routers only).

show pppoe statistics

Syntax Description

None

Command History

Release	Modification
15.3.3	Command introduced.

Example

```
vEdge# show pppoe statistics
      pppoe_tx_pkts             :      73
      pppoe_rx_pkts             :      39
      pppoe_tx_session_drops    :      0
      pppoe_rx_session_drops    :      0
      pppoe_inv_discovery_pkts  :      0
      pppoe_ccp_pkts            :      12
      pppoe_ipcp_pkts           :      16
      pppoe_lcp_pkts            :      35
      pppoe_padi_pkts           :      4
      pppoe_pado_pkts           :      2
      pppoe_padr_pkts           :      2
      pppoe_pads_pkts           :      2
      pppoe_padt_pkts           :      2
```

Related Topics

clear pppoe statistics, on page 58
show pppoe session, on page 421
show ppp interface, on page 420

show reboot history

To display the history of when the Cisco vManage device is rebooted, use the **show reboot history** command in privileged EXEC mode. The command displays only the latest 20 reboots.

show reboot history

Syntax Description

None

Command History

Release	Modification
14.1	Command introduced.

Example

```
vEdge# show reboot history
REBOOT DATE TIME           REBOOT REASON
---------------------------------------------------------------------------
2016-03-14T23:24:43+00:00  Initiated by user - patch
2016-03-14T23:36:20+00:00  Initiated by user
```

```
2016-03-15T21:06:56+00:00  Initiated by user - activate next-1793
2016-03-15T21:10:11+00:00  Software initiated - USB controller disabled
2016-03-15T21:12:53+00:00  Initiated by user
2016-03-15T23:47:59+00:00  Initiated by user
2016-03-15T23:54:49+00:00  Initiated by user
2016-03-15T23:58:28+00:00  Initiated by user
2016-03-16T00:01:32+00:00  Initiated by user
2016-03-16T00:11:02+00:00  Initiated by user
2016-03-16T00:14:42+00:00  Initiated by user
2016-03-16T00:20:30+00:00  Initiated by user
2016-03-16T00:27:11+00:00  Initiated by user
2016-03-16T00:38:46+00:00  Software initiated - watchdog expired
2016-03-16T00:49:25+00:00  Software initiated - watchdog expired
2016-03-16T01:00:07+00:00  Software initiated - watchdog expired
2016-03-16T03:22:05+00:00  Initiated by user
2016-03-16T03:35:40+00:00  Initiated by user
2016-03-16T21:42:19+00:00  Initiated by user
2016-03-16T22:00:25+00:00  Initiated by user
```

Related Topics

reboot, on page 94
show system status, on page 459

show running-config

Display the active configuration that is running on the Cisco vEdge device. Use the **details** filter with this command to display the default values for configured components.

show running-config [*configuration-hierarchy*]

show running-config [*configuration-hierarchy*] | **details**

Syntax Description

None	Display the full active configuration.
| details	Default Values in Running Configuration: Display the default values for the components configured in the running configuration.
configuration-hierarchy	Specific Configuration Hierarchy: Display the active configuration for a specific hierarchy in the configuration.

Command History

Release	Modification
14.1	Command introduced.
Cisco SD-WAN Release 20.8.1	Added **secondary-region** to the output to show the Hierarchical SD-WAN region ID, and **region** to show the secondary region mode. Added **transport-gateway** to the output to indicate the enabled/disabled status. Added **affinity-group** and **affinity-group preference** to the output to indicate the affinity group ID assigned to the device and the preference order.

Examples

Example 1

```
vEdge# show running-config system
system
host-name vedge1
system-ip 172.16.255.1
domain-id 1
site-id   1
clock timezone America/Los_Angeles
vbond 10.0.14.4
aaa
  auth-order local radius
  usergroup basic
   task system read write
   task interface read write
  !
  usergroup netadmin
  !
  usergroup operator
   task system read
   task interface read
   task policy read
   task routing read
   task security read
  !
  user admin
   password $1$zvOh58pk$QLX7/RS/F0c6ar94.xl2k.
  !
  user eve
   password $1$aLEJ6jve$aBpPQpkl3h.SvA2dt4/6E/
   group    operator
  !
!
logging
  disk
   enable
  !
 !
!
```

Example 2

```
vEdge# show running-config vpn 1
vpn 1
 name ospf_and_bgp_configs
 router
  ospf
   router-id 172.16.255.15
   timers spf 200 1000 10000
   redistribute static
   redistribute omp
   area 0
    interface ge0/4
    exit
   exit
  !
  pim
   interface ge0/5
   exit
```

```
  exit
 !
 interface ge0/4
  ip address 10.20.24.15/24
  no shutdown
 !
 interface ge0/5
  ip address 56.0.1.15/24
  no shutdown
 !
!
vEdge# show running-config vpn 1 | details
vpn 1
 name ospf_and_bgp_configs
 no ecmp-hash-key layer4
 router
  ospf
   router-id 172.16.255.15
   auto-cost reference-bandwidth 100
   compatible rfc1583
   distance external 0
   distance inter-area 0
   distance intra-area 0
   timers spf 200 1000 10000
   redistribute static
   redistribute omp
   area 0
    interface ge0/4
     hello-interval      10
     dead-interval       40
     retransmit-interval 5
     priority            1
     network             broadcast
    exit
   exit
  !
  pim
   no shutdown
   no auto-rp
   interface ge0/5
    hello-interval      30
    join-prune-interval 60
   exit
  exit
 !
 interface ge0/4
  ip address 10.20.24.15/24
  flow-control        autoneg
  no clear-dont-fragment
  no pmtu
  mtu                 1500
  no shutdown
  arp-timeout         1200
 !
 interface ge0/5
  ip address 56.0.1.15/24
  flow-control        autoneg
  no clear-dont-fragment
  no pmtu
  mtu                 1500
  no shutdown
  arp-timeout         1200
 !
!
```

Example 3

```
vEdge(config-snmp)# show running-config snmp
snmp
 no shutdown
 view v3
  oid 1.3.6.1
!
 group groupAuthPriv auth-priv
  view v3
!
 user v3userAuthPriv-sha-aes
  auth sha-256
  auth-password 1234567890
  priv aes-256-cfb-128
  priv-password 1234567890
  group groupAuthPriv
 !
!
```

Related Topics

config, on page 66

show sdwan

Display SD-WAN related information about the IOS XE router.

show sdwan app-fwd

show sdwan app-route

show sdwan bfd

show sdwan certificate

show sdwan confd-logs

show sdwan control

show sdwan crash

show sdwan debugs

show sdwan ipsec

show sdwan nat-fwd

show sdwan notification

show sdwan omp

show sdwan policy

show sdwan running-config

show sdwan security-info

show sdwan software

show sdwan transport

show sdwan tunnel

show sdwan version

show sdwan zbfw

show sdwan zonebfwdp

Syntax Description

The options for the **show sdwan** commands are the same as for the equivalent vEdge router commands.

Command History

Release	Modification
16.9.1	Command introduced.

Example

The example output for the **show sdwan** commands is the same as for the equivalent vEdge router commands. Below is an example output for the **show sdwan app-route** command.

```
ISR4K# show sdwan app-route stats
app-route statistics 10.239.136.233 35.164.167.186 ipsec 12366 12366
 remote-system-ip 172.16.100.6
 local-color      custom2
 remote-color     3g
 mean-loss        0
 mean-latency     20
 mean-jitter      0
 sla-class-index  0
       TOTAL          AVERAGE  AVERAGE  TX DATA  RX DATA
INDEX  PACKETS  LOSS  LATENCY  JITTER   PKTS     PKTS
-----------------------------------------------------------
0      662      0     21       0        0        0
1      663      0     21       0        0        0
2      663      1     20       0        0        0
3      663      0     20       0        0        0
4      662      0     20       0        0        0
5      664      1     20       0        0        0
app-route statistics 10.239.136.233 64.71.131.98 ipsec 12366 59448
 remote-system-ip 172.16.255.210
 local-color      custom2
 remote-color     default
 mean-loss        100
 mean-latency     0
 mean-jitter      0
 sla-class-index  0
       TOTAL          AVERAGE  AVERAGE  TX DATA  RX DATA
INDEX  PACKETS  LOSS  LATENCY  JITTER   PKTS     PKTS
-----------------------------------------------------------
0      661      661   0        0        0        0
1      662      662   0        0        0        0
2      661      661   0        0        0        0
3      662      662   0        0        0        0
4      661      661   0        0        0        0
5      664      664   0        0        0        0
```

Related Topics

show sdwan policy, on page 440

show sdwan alarms detail

To view detailed information about each alarm separated by a new line, use the **show sdwan alarms detail** command in privileged EXEC mode. This command provides better readability into the alarms.

show sdwan alarms detail

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.12.x	This command was introduced.

Examples

The following is a sample output of the **show sdwan alarms detail** command:

```
vm5#show sdwan alarms detail

alarms 2023-06-01:00:38:46.868569
 event-name     geo-fence-alert-status
 severity-level minor
 host-name      Router
 kv-pair        [ system-ip=:: alert-type=device-tracking-stop alert-msg=Device Tracking
stopped in Geofencing Mode latitude=N/A longitude=N/A geo-color=None ]
-----------------------------------------------------

alarms 2023-06-01:00:38:47.730907
 event-name     system-reboot-complete
 severity-level major
 host-name      Router
 kv-pair        [ ]
-----------------------------------------------------

alarms 2023-06-01:00:39:00.633682
 event-name     pki-certificate-event
 severity-level critical
 host-name      Router
 kv-pair        [ trust-point=Trustpool event-type=pki-certificate-install
valid-from=2008-11-18T21:50:24+00:00 expires-at=2033-11-18T21:59:46+00:00 is-ca-cert=true
subject-name=cn=Cisco Root CA M1,o=Cisco issuer-name=cn=Cisco Root CA M1,o=Cisco
serial-number=2ED20E7347D333834B4FDD0DD7B6967E ]
-----------------------------------------------------
```

show sdwan alarms summary

To view alarm details such as the timestamp, event name, and severity in a tabular format, use the **show sdwan alarms summary** command in privileged EXEC mode. This command provides better readability into the alarms.

show sdwan alarms summary

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.12.x	This command was introduced.

Examples

The following is a sample output of the **show sdwan alarms summary** command:

```
vm5#show sdwan alarms summary

time-stamp                    event-name                                        severity-l

-------------------------------------------------------------------------------------------
2023-06-01:00:38:46.868569      geo-fence-alert-status                            minor

2023-06-01:00:38:47.730907      system-reboot-complete                            major

2023-06-01:00:39:00.633682      pki-certificate-event                           critical

2023-06-01:00:39:00.644209      pki-certificate-event                           critical

2023-06-01:00:39:00.649363      pki-certificate-event                           critical

2023-06-01:00:39:00.652777      pki-certificate-event                           critical

2023-06-01:00:39:00.658387      pki-certificate-event                           critical

2023-06-01:00:39:00.661119      pki-certificate-event                           critical

2023-06-01:00:39:00.665882      pki-certificate-event                           critical

2023-06-01:00:39:00.669655      pki-certificate-event                           critical

2023-06-01:00:39:00.674912      pki-certificate-event                           critical

2023-06-01:00:39:00.683510      pki-certificate-event                           critical

2023-06-01:00:39:00.689850      pki-certificate-event                           critical

2023-06-01:00:39:00.692883      pki-certificate-event                           critical

2023-06-01:00:39:00.699143      pki-certificate-event                           critical

2023-06-01:00:39:00.702386      pki-certificate-event                           critical

2023-06-01:00:39:00.703653      pki-certificate-event                           critical
```

```
2023-06-01:00:39:00.704488      pki-certificate-event                       critical

2023-06-01:00:39:01.949479      pki-certificate-event                       critical

2023-06-01:00:40:38.992382      interface-state-change                        major

2023-06-01:00:40:39.040929      fib-updates                                   minor

2023-06-01:00:40:39.041866      fib-updates                                   minor
```

show sdwan appqoe

To view infrastructure statistics, NAT statistics, resource manager resources and statistics, TCP optimization status, and service chain status, use the **show sdwan appqoe** command in privileged EXEC mode.

show sdwan appqoe { **infra-statistics** | **nat-statistics** | **rm-statistics** | **ad-statistics** | **aoim-statistics** | **rm-resources** | **tcpopt status** | **service-chain status** | **libuinet-statistics** [**sppi** | **verbose**] }

Syntax Description

infra-statistics	Displays infra statistics
nat-statistics	Displays NAT statistics
rm-statistics	Displays resource manager status
ad-statistics	Displays the status for auto discovery of peer devices
aoim-statistics	Displays the statistics for one time exchange of information between peer devices
rm-resources	Displays resource manager resources
tcpopt status	Displays information about TCP optimization
service-chain status	Displays service chain status
libuinet-statistics sppi verbose	Displays libuinet statistics

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1r	Command introduced.

```
Device# show sdwan appqoe tcpopt status
=========================================================
                  TCP-OPT Status
=========================================================

Status
------
TCP OPT Operational State      : RUNNING
TCP Proxy Operational State    : RUNNING
```

```
Device#show sdwan appqoe nat-statistics
============================================================
             NAT Statistics
============================================================
 Insert Success      : 48975831
 Delete Success      : 48975823
 Duplicate Entries   : 19
 Allocation Failures : 0
 Port Alloc Success  : 0
 Port Alloc Failures : 0
 Port Free Success   : 0
 Port Free Failures  : 0
```

```
Device# show sdwan appqoe service-chain status
Service                   State
-------                   -----
SNORT Connection          UP
```

```
Device#  sdwan appqoe libuinet-statistics
============================================================
             Libuinet Statistics
============================================================
SPPI Statistics:
 Available Packets          : 1214696704
 Errored Available Packets  : 111235402
 Rx Packets                 : 1214696704
 Failed Rx Packets          : 0
 Tx Packets                 : 1124139791
 Tx Full Wait               : 0
 Failed Tx Packets          : 0
 PD Alloc Success           : 1226942851
 PD Alloc Failed            : 0
 PB Current Count           : 32768
 Pipe Disconnect            : 0

Vpath Statistics:
 Packets In                 : 1214696704
 Control Packets            : 250438
 Data Packets               : 1214446263
 Packets Dropped            : 351131
 Non-Vpath Packets          : 3
 Decaps                     : 1214446263
 Encaps                     : 1123889349
 Packets Out                : 1111643206
 Syn Packets                : 12248341
 Syn Drop Max PPS Reached   : 0
 IP Input Packets           : 1214095132
 IP Input Bytes             : 856784254349
 IP Output Packets          : 1111643202
 IP Output Bytes            : 917402419856
 Flow Info Allocs           : 12248341
 Flow Info Allocs Failed    : 0
 Flow Info Allocs Freed     : 12248339
 Rx Version Prob Packets    : 1
 Rx Control Packets         : 250437
 Rx Control Healthprobe Pkts: 250437
 ICMP incoming packet count: 0
 ICMP processing success: 0
 ICMP processing failures: 0
 Non-Syn nat lkup failed Pkts: 348691
 Nat lkup success for Syn Pkts: 248
 Vpath drops due to min threshhold: 0
 Flow delete notify TLV Pkts: 12246147
 Failed to allocate flow delete notify TLV Pkts: 0
 Failed to send flow delete notify TLV Pkts: 0
```

```
 Failed to create new connection: 2192


Device# show sdwan appqoe rm-resources
============================================================
              RM Resources
============================================================
RM Global Resources :
 Max Services Memory (KB)    : 1537040
 Available System Memory(KB) : 3074080
 Used Services Memory (KB)   : 228
 Used Services Memory (%)    : 0
 System Memory Status        : GREEN
 Num sessions Status         : GREEN
 Overall HTX health Status   : GREEN

Registered Service Resources :
TCP Resources:
 Max Sessions                : 40000
 Used Sessions               : 42
 Memory Per Session          : 128
SSL Resources:
 Max Sessions                : 40000
 Used Sessions               : 2
 Memory Per Session          : 50
Device# show sdwan appqoe ad-statistics

============================================================

              Auto-Discovery Statistics

============================================================

 Auto-Discovery Option Length Mismatch       : 0

 Auto-Discovery Option Version Mismatch      : 0

 Tcp Option Length Mismatch                  : 6

 AD Role set to NONE                         : 0

 [Edge] AD Negotiation Start                 : 96771

 [Edge] AD Negotiation Done                  : 93711

 [Edge] Rcvd SYN-ACK w/o AD options          : 0

 [Edge] AOIM sync Needed                     : 99

 [Core] AD Negotiation Start                 : 10375

 [Core] AD Negotiation Done                  : 10329

 [Core] Rcvd ACK w/o AD options              : 0

 [Core] AOIM sync Needed                     : 0
Device# show sdwan appqoe aoim-statistics

============================================================

              AOIM Statistics

============================================================
```

```
 Total Number Of Peer Syncs      : 1

 Current Number Of Peer Syncs in Progress      : 0

 Number Of Peer Re-Syncs Needed      : 1

 Total Passthrough Connections Due to Peer Version Mismatch   : 0

 AOIM DB Size (Bytes): 4194304


 LOCAL AO Statistics

----------------------------------------

 Number Of AOs      : 2

 AO             Version   Registered

 SSL             1.2        Y

 DRE             0.23       Y


 PEER Statistics

----------------------------------------

 Number Of Peers      : 1

 Peer ID: 203.203.203.11

 Peer Num AOs      : 2

 AO             Version   InCompatible

 SSL             1.2        N

 DRE             0.23       N
```

show sdwan appqoe flow closed

To view the closed appqoe flows, use the **show sdwan appqoe flow closed** command in privileged EXEC mode.

show sdwan appqoe flow closed { **all** | **detail** | **flow-id** *flow-id* | **server-port** *port-number* | **server-ip** *server-ip* [**server-port** *port-number*] | **client-ip** *client-ip* [**server-port** *port-number*] | **server-port** *port-number* | **error** [**detail** | **flow-id**] }

Syntax Description

all	Displays all flows
detail	Displays flow details for all flows
flow-id *flow-id*	Filters flows by flow-id

server-ip *server-ip*	Filters flows by the server IP address
client-ip *client-ip*	Filters flows by the client IP address
server-port *port-number*	Filters flows by server port number. Range: 1 to 65535
error	Displays the latest flows with errors.

Command Modes Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1r	This command was introduced.
Cisco IOS XE Catalyst SD-WAN Release 17.6.1a	A new keyword **error** was introduced.

The following is a sample out from the **show sdwan appqoe flow closed all** command:

```
Device# show sdwan appqoe flow closed all
Current Historical Optimized Flows: 6

Optimized Flows
---------------
T:TCP, S:SSL, U:UTD

Flow ID           VPN    Source IP:Port        Destination IP:Port      Service

52590946740086387 101    192.0.2.254:52895     198.51.100.77:443        TSU
52592155669963238 101    192.0.2.254:53394     198.51.100.10:443        TSU
52592460109050976 101    192.0.2.254:53465     198.51.100.22:443        TSU
52592469869036268 101    192.0.2.254:53467     198.51.100.55:443        TSU
52592624888356116 101    192.0.2.254:56293     198.51.100.78:443        TSU
52592627585006471 101    192.0.2.254:56294     198.51.100.99:443        TSU
```

The following is sample out from the **show sdwan appqoe flow closed error** command:

```
Device# show sdwan appqoe flow closed error
Current Historical Optimized Flows: 1
Optimized Flows
---------------
T:TCP, S:SSL, U:UTD, D:DRE, RR:DRE Reduction Ratio
Flow ID      VPN  Source IP:Port        Destination IP:Port    T:S:U:D   RR%      Error
2267354182    1   192.0.2.254:37492     198.51.100.77:6000     1:1:0:0            T:Closed
 by SSL-S:Unsupported cipher
```

show sdwan appqoe flow flow-id

To view the closed appqoe flows, use the **show sdwan appqoe flow flow-id** command in privileged EXEC mode.

show sdwan appqoe flow *flow-id* [**debug** { **all** | **SSL** | **TCP** | **UTD** }]

Syntax Description

all	Displays all debug statistics

SSL	Displays debug statistics for SSL
TCP	Displays debug statistics for TCP
UTD	Displays debug statistics for UTD
DRE	Displays debug statistics for DRE

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1r	Command introduced.

Usage Guidelines

Run this command in privileged EXEC mode.

```
Device# show sdwan appqoe flow flow-id 52590946740086387
Flow ID: 52590946740086387

VPN: 101  APP: 0 [Client 192.0.2.254:52895 - Server 198.51.100.77:443]

TCP stats
---------
Client Bytes Received   : 1702
Client Bytes Sent       : 2877
Server Bytes Received   : 4102
Server Bytes Sent       : 1511
TCP Client Rx Pause     : 0x0
TCP Server Rx Pause     : 0x0
TCP Client Tx Enabled   : 0x0
TCP Server Tx Enabled   : 0x0
Client Flow Pause State : 0x0
Server Flow Pause State : 0x0
TCP Flow Bytes Consumed : 0
TCP Client Close Done   : 0x0
TCP Server Close Done   : 0x0
TCP Client FIN Rcvd     : 0x0
TCP Server FIN Rcvd     : 0x0
TCP Client RST Rcvd     : 0x0
TCP Server RST Rcvd     : 0x0
TCP FIN/RST Sent        : 0x0
Flow Cleanup State      : 0x0
TCP Flow Events
   1. time:4024.495732   ::   Event:TCPPROXY_EVT_FLOW_CREATED
   2. time:4024.495748   ::   Event:TCPPROXY_EVT_SYNCACHE_ADDED
   3. time:4024.496141   ::   Event:TCPPROXY_EVT_ACCEPT_DONE
   4. time:4024.496246   ::   Event:TCPPROXY_EVT_CONNECT_START
   5. time:4024.746338   ::   Event:TCPPROXY_EVT_CONNECT_DONE
   6. time:4024.746351   ::   Event:TCPPROXY_EVT_FLOW_CREATE_UTD_SENT
   7. time:4024.746420   ::   Event:TCPPROXY_EVT_FLOW_CREATE_UTD_RSP_SUCCESS
   8. time:4024.746442   ::   Event:TCPPROXY_EVT_FLOW_CREATE_SSL_DONE
   9. time:4024.746466   ::   Event:TCPPROXY_EVT_FLOW_ENABLE_SSL
  10. time:4024.746491   ::   Event:TCPPROXY_EVT_DATA_ENABLED_SUCCESS

SSL stats
---------
S-to-C Encrypted Bytes Written  : 638
S-to-C Encrypted Bytes Read     : 638
S-to-C Decrypted Bytes Written  : 319
S-to-C Decrypted Bytes Read     : 319
```

```
S-to-C Clear Flow Bytes         : 0
C-to-S Encrypted Bytes Written  : 1059
C-to-S Encrypted Bytes Read     : 1059
C-to-S Decrypted Bytes Written  : 740
C-to-S Decrypted Bytes Read     : 740
C-to-S Clear Flow Bytes         : 0

Proxy Server State Trace
INITIALIZED PRE_SSL HANDSHAKE EXPORT APP_DATA
Event: LWSSL_EVT_PEER_INIT_DONE State: INITIALIZED
Event: LWSSL_EVT_PRE_SSL_DONE State: PRE_SSL
Event: LWSSL_EVT_CCS_FIN_RCV State: HANDSHAKE
Event: LWSSL_EVT_KEY_PACKET_INIT_DONE State: EXPORT

Proxy Client State Trace
INITIALIZED FORWARD FORWARD_HANDSHAKE IMPORT APP_DATA
Event: LWSSL_EVT_PEER_INIT_DONE State: INITIALIZED
Event: LWSSL_EVT_HANDSHAKE_BEGIN State: FORWARD
Event: LWSSL_EVT_CCS_FIN_RCV State: FORWARD_HANDSHAKE
Event: LWSSL_EVT_KEY_PACKET_INIT_DONE State: IMPORT
```

show sdwan appqoe flow vpn-id

To view the appqoe flows using vpn ids, use the **show sdwan appqoe flow vpn-id** command in privileged EXEC mode.

show sdwan appqoe flow vpn-id *vpn-id* { **client-ip** *client-ip* [**server-ip** *server-ip* [**server-port** *port-number*]] | **server-ip** *server-ip* **server-port** *port-number* | **server-port** *port-number* }

Syntax Description

vpn-id	VPN/VRF ID. Range: 1 to 64
client-ip *client-ip*	Filters flows by the client IP address
server-ip *server-ip*	Filters flows by the server IP address
server-port *port-number*	Filters flows by server port number. Range: 1 to 65535

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1r	Command introduced.

```
Device# show sdwan appqoe flow vpn-id 101 server-port 443
T:TCP, S:SSL, U:UTD

Flow ID      VPN  Source IP:Port              Destination IP:Port   Service
52590946740086387 101    192.0.2.254:52895     198.51.100.77:443        TSU
52592155669963238 101    192.0.2.254:53394     198.51.100.10:443        TSU
52592460109050976 101    192.0.2.254:53465     198.51.100.22:443        TSU
52592469869036268 101    192.0.2.254:53467     198.51.100.55:443        TSU
52592624888356116 101    192.0.2.254:56293     198.51.100.78:443        TSU
52592627585006471 101    192.0.2.254:56294     198.51.100.99:443        TSU
```

show sdwan cloudexpress applications

To display the best path that Cloud onRamp for SaaS has selected for each configured SaaS application, on Cisco IOS XE Catalyst SD-WAN devices, use the **show sdwan cloudexpress applications** command in privileged EXEC mode.

show sdwan cloudexpress applications

Syntax Description

None.

Command Mode

Privileged EXEC mode

Command History

Release	Modification
Cisco IOS XE Release 17.2	This command was introduced.

Examples

Example

```
Device# show sdwan cloudexpress applications
cloudexpress applications vpn 1 office365
exit-type local
interface GigabitEthernet1
latency   1
loss      40
cloudexpress applications vpn 1 amazon_aws
exit-type         gateway
gateway-system-ip 10.0.0.1
latency           1
loss              0
local-color       lte
remote-color      lte
cloudexpress applications vpn 1 dropbox
exit-type         gateway
gateway-system-ip 10.0.0.1
latency           19
loss              0
local-color       lte
remote-color      lte
```

show sdwan cloudexpress gateway-exits

To display the Quality of Experience (QoS) measurements received from gateway sites, for Cloud onRamp for SaaS, on Cisco IOS XE Catalyst SD-WAN devices, use the **show sdwan cloudexpress gateway-exits**

command in privileged EXEC mode. The output may include entries for branch sites, and for branch sites with direct internet access (DIA).

show sdwan cloudexpress gateway-exits

Syntax Description

This command has no arguments or keywords.

Command Mode

Privileged EXEC mode

Command History

Release	Modification
Cisco IOS XE Release 17.2	This command was introduced.

Examples

Example

```
Device# show sdwan cloudexpress gateway-exits
cloudexpress gateway-exits vpn 1 office365 10.0.0.1
latency      2
loss         50
local-color  lte
remote-color lte
cloudexpress gateway-exits vpn 1 amazon_aws 10.0.0.2
latency      1
loss         0
local-color  lte
remote-color lte
cloudexpress gateway-exits vpn 1 dropbox 10.0.0.2
latency      19
loss         0
local-color  lte
remote-color lte
```

show sdwan cloudexpress local-exits

To display the list of applications enabled for Cloud onRamp for SaaS probing, on Cisco IOS XE Catalyst SD-WAN devices, and the interfaces on which the probing occurs, use the **show sdwan cloudexpress local-exits** command in privileged EXEC mode. Each line of the output applies to a specific application and interface, and includes the average latency and loss for each application and interface. The interfaces may include branch site direct internet access (DIA) interfaces, and gateway site interfaces.

show sdwan cloudexpress local-exits

Syntax Description

This command has no arguments or keywords.

Command Mode

Privileged EXEC mode

Command History

Release	Modification
Cisco IOS XE Release 17.2	This command was introduced.

Examples

Example

```
Device# show sdwan cloudexpress local-exits
VPN  APPLICATION              INTERFACE                LATENCY  LOSS
------------------------------------------------------------------------
1    office365                GigabitEthernet1         1        43
1    office365                GigabitEthernet5         1        42
```

show sdwan cloudexpress service-area-applications

To display the applications enabled for Cloud onRamp for SaaS and the best path that has been selected for each, use the **show sdwan cloudexpress service-area-applications** command in Privileged EXEC mode.

show sdwan cloudexpress service-area-applications

Command Default

Not applicable.

Command Modes

Privileged EXEC

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.4.1a	This command is introduced.

Usage Guidelines

The output includes separate sections with the details for each unique combination of:

- Service area (Microsoft Exchange traffic is currently the only possible value)
- VPN
- Application

For each combination, the output includes:

- **exit-type**:
  - **Local**: The application traffic uses the local interface – for example a Direct Internet Access (DIA) interface at a branch site.
  - **Gateway**: The application traffic uses a remote gateway.

    - **None**: Cloud onRamp for SaaS has not determined a best path for the application traffic.

- **interface**: Interface for current best path.
- **latency**: Last measured latency.
- **loss**: Last measured packet loss.
- **override-status**: Score for the path:
    - **OK**: Acceptable for application traffic.
    - **NOT-OK**: Not acceptable for application traffic.
    - **INIT**: Insufficient data.

Example

In the following example, the output snippet shows the best-path information for the office365 application, for VPN 1 only. In the example, Office 365 traffic on VPN 1 is using a local interface (GigabitEthernet0/0/2).

```
Device#show sdwan cloudexpress service-area-applications
cloudexpress service-area-applications Exchange vpn 1 office365
exit-type local
interface GigabitEthernet0/0/2
latency 3
loss 0
override-status OK
```

show sdwan policy

Display information about policy configuration on the IOS XE router.

show sdwan policy app-route-policy filter

show sdwan policy access-list-associations

show sdwan policy access-list-counters

show sdwan policy access-list-names

show sdwan policy data policy filter

show sdwan policy from-vsmart

show sdwan policy from-vsmart lists

Syntax Description

The options for the **show sdwan policy** commands are the same as for the equivalent vEdge router commands.

Command History

Release	Modification
16.9.1	Command introduced.

Note The **show sdwan policy data-policy-filter** commands display in different formats depending on if the counter has a value or not. If the counter has a value, the output for the show sdwan policy data-policy-filter displays in a linear format. If the counter does not have a value, the output displays in a tabular format.

Example

The example output for the **show sdwan policy** commands is the same as for the equivalent vEdge router commands. Below is an example output for the **show sdwan policy app-route-policy-filter** command.

```
ISR4K# show sdwan policy app-route-policy-filter
app-route-policy-filter app_route_policy_pm9008
 app-route-policy-vpnlist all_vpns
  app-route-policy-counter count_appr_pm9008_1001
   packets 15126027
   bytes   15305251759
  app-route-policy-counter count_appr_pm9008_1002
   packets 10364400
   bytes   11151607158
  app-route-policy-counter count_appr_pm9008_1003
   packets 0
   bytes   0
  app-route-policy-counter count_appr_pm9008_1004
   packets 265882
   bytes   34997066
```

```
CSR# show sdwan policy data-policy-filter
                                                        POLICER  OOS      OOS
NAME       NAME  COUNTER NAME          PACKETS  BYTES  NAME     PACKETS  BYTES
-------------------------------------------------------------------------------
TCP_Proxy  1     TCP1                  0        0
                 TCP2                  0        0
                 default_action_count  0        0
```

When counter has some value it has below output pattern.

```
CSR# show sdwan policy data-policy-filter
data-policy-filter TCP_Proxy
data-policy-vpnlist 1
  data-policy-counter TCP1
   packets 764954
   bytes   1009386894
  data-policy-counter TCP2
   packets 163154
   bytes   14693558
  data-policy-counter default_action_count
   packets 22
   bytes   7524
```

Related Topics

show sdwan, on page 426

show sdwan policy service-path

To display the next-hop information for an IP packet that a Cisco IOS XE router received from a service-side interface, use the **show sdwan policy service-path** command in the privileged EXEC mode.

show sdwan policy service-path vpn-id *vpn-id* **interface** *interface-name* **source-ip** *ip-address* **dest-ip** *ip-address* **protocol** *number* **source-port** *port-number* **dest-port** *port-number* [**all** | **app** *application-name* | **dscp** *value*]

Syntax Description

vpn-id *vpn-id*	Identifies the service VPN.
interface *interface-name*	Specifies the name of the local interface being used for the IPsec tunnel.
source-ip *ip-address*	Specifies the source IP address number of the local end of the IPsec tunnel.
dest-ip *ip-address*	Specifies the destination IP address of the remote end of the IPsec tunnel.
protocol *number*	Specifies the number of the protocol being used on the IPsec tunnel.
source-port *port-number*	Specifies the port number of the local end of the IPsec tunnel.
dest-port *port-number*	Specifies the port number of the remote end of the IPsec tunnel.
all	Displays all possible paths for a packet.
app *application-name*	Displays the packets associated with the specified DPI application.
dscp *value*	Specifies the DSCP value being used on the IPsec tunnel.*Range:* 0 through 63

Command Default

NA

Command Modes

Privileged EXEC

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1r	This command was introduced.

Usage Guidelines

You identify the IP packet by specifying fields in the IP header. You can use this command when using application-aware routing, to determine that path taken by the packets associated with a DPI application.

Example

```
Device#show sdwan policy service-path
vpn 1 interface GigabitEthernet 5 source-ip 10.20.24.17 dest-ip 10.20.25.18
protocol 1 Next Hop: IPsec
Source: 10.1.15.15 12346 Destination: 10.1.16.16 12366
Local Color: lte Remote Color: lte Remote System IP: 172.16.255.16
```

show sdwan policy tunnel-path

To display the next-hop information for an IP packet that a Cisco IOS XE router received from a WAN transport tunnel interface, use the **show sdwan policy tunnel-path** command in the privileged EXEC mode.

show sdwan policy tunnel-path vpn-id *vpn-id* **interface** *interface-name* **source-ip** *ip-address* **dest-ip** *ip-address* **protocol** *number* **source-port** *port-number* **dest-port** *port-number* [**all** | **app** *application-name* | **dscp** *value*]

Syntax Description

vpn-id *vpn-id*	Identifies the service VPN.
interface *interface-name*	Specifies the name of the local interface being used for the IPsec tunnel.
source-ip *ip-address*	Specifies the source IP address number of the local end of the IPsec tunnel.
dest-ip *ip-address*	Specifies the destination IP address of the remote end of the IPsec tunnel.
protocol *number*	Specifies the number of the protocol being used on the IPsec tunnel.
source-port *port-number*	Specifies the port number of the local end of the IPsec tunnel.
dest-port *port-number*	Specifies the port number of the remote end of the IPsec tunnel.
all	Displays all possible paths for a packet.
app *application-name*	Displays the packets associated with the specified DPI application.
dscp *value*	Specifies the DSCP value being used on the IPsec tunnel.*Range:* 0 through 63

Command Default

NA

Command Modes

Privileged EXEC

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1r	This command was introduced.

Usage Guidelines

You identify the IP packet by specifying fields in the IP header. You can use this command when using application-aware routing, to determine that path taken by the packets associated with a DPI application.

Example

```
Device#show sdwan policy tunnel-path
vpn 0 interface ge0/2 source-ip 10.0.5.11 dest-ip 10.0.5.21 protocol 6
source-port 12346 dest-port 12346
Nexthop: Direct Interface ge0/2 index: 3
```

show security-info

List the configured security information for IPsec tunnel connections (on vEdge routers only).

show security-info [**authentication-type** | **encryption-supported** | **fips-mode** | **pairwise-keying** | **rekey** | **replay-window**]

Syntax Description

None	Lists information about all configured IPsec tunnel security parameters.
authentication-type	Lists the configured authentication type for IPsec tunnels.
encryption-supported	Lists the supported encryption type.
fips-mode	Displays whether fips mode is enabled or disabled.
pairwise-keying	Displays whether pairwise-keying is enabled or disabled.
rekey	Lists the configured rekeying time for IPsec tunnels, in seconds.
replay-window	Lists the configured replay window size for IPsec tunnels.

Command History

Release	Modification
14.2	Command introduced.
16.2	Added support for displaying authentication negotiation.
17.2	Added FIPS status
Cisco SD-WAN Release 20.6.1	The output of this command was modified to included an additional field, `security-info integrity-type`.

The following is a sample output from the **show security-info** command applicable to Cisco SD-WAN Release 20.6.1 and later.

```
vm4# show security-info
security-info authentication-type deprecated
security-info rekey  86400
security-info replay-window 512
security-info encryption-supported "AES_GCM_256 (for unicast & multicast)"
security-info fips-mode Enabled
security-info pairwise-keying Disabled
security-info integrity-type "ip-udp-esp esp"
```

The following is a sample output from the **show security-info** command applicable to releases before Cisco SD-WAN Release 20.6.1.

```
vEdge# show security-info
security-info authentication-type "SHA1_HMAC / NULL"
security-info rekey 3600000
security-info replay-window 512
security-info encryption-supported "AES_GCM_256 and, for multicast, AES_256_CBC"
security-info fips-mode Enabled
```

Related Topics

ipsec

show nms server-proxy ratelimit

To view rate limits for bulk and non-bulk APIs, use the **show nms server-proxy ratelimit** command in the operational mode.

show nms server-proxy ratelimit

Syntax Description

This command has no arguments or keywords.

Command Modes

Operational mode (#)

Command History

Release	Modification
Cisco vManage Release 20.10.1	This command is introduced.

Examples

The following is a sample output of the **show nms server-proxy ratelimit** command on a single Cisco vManage node:

```
vManage# show nms server-proxy ratelimit

Non Bulk API: 100/second (per node)

Bulk API: 48/minute (per node)
```

The following is a sample output of the **show nms server-proxy ratelimit** command on a Cisco vManage node belonging to a three-node cluster:

```
vManage# show nms server-proxy ratelimit
Non Bulk API: 100/second (per node)
Bulk API: 150/minute (across cluster)
```

Related Commands

Command	Description
request nms server-proxy set ratelimit	Configures rate limits for bulk and non-bulk APIs on the Cisco vManage server-proxy.

show software

List the software images that are installed on the local device (on vEdge routers and vSmart controllers).

show software *image-name* [**active** | **confirmed** | **default** | **previous** | **timestamp**]

show software

Syntax Description

None	List information about all software images installed on the local device.
[**active** | **confirmed** | **default** | **previous** | **timestamp**]	Software Image Status: List whether the image is the actively running image, the default image, or the previously running image, when the image was installed, and who confirmed the software installation.
image-name	Specific Software Image: List information about a specific software image.

Command History

Release	Modification
15.3.3	Command introduced for vEdge 100 routers only.
15.4	Command available on all Cisco SD-WAN devices.

Example

```
vEdge# show software

VERSION   ACTIVE  DEFAULT  PREVIOUS  CONFIRMED  TIMESTAMP
-------------------------------------------------------------------------------
15.3.3    true    true     false     -          2015-10-08T12:54:50-00:00
```

Related Topics

request download, on page 110
request software activate, on page 142
request software install-image, on page 145
request software remove, on page 146
request software reset, on page 147
show version, on page 476

show support omp peer

To display information about the active OMP peer sessions on the local Cisco SD-WAN Controller or Cisco vEdge device, use the **show support omp peer** command in privilege EXEC mode.

show support omp peer peer-ip *ip-address*

Syntax Description

peer-ip	System-IP address of the connected Cisco Catalyst SD-WAN device.
ip-address	Display configuration OMP peer session information about a specific peer.

Command Modes

Privileged EXEC (#)

Command History

Release	Modifications
Cisco SD-WAN Release 20.8.1	This command was introduced.
Cisco Catalyst SD-WAN Control Components Release 20.11.1	Added the **TLOC color supported list** field in the output.

Usage Guidelines

Detailed information about OMP peer is displayed along with all timers and assigned policies in XML format.

The following is a sample output from the **show support omp peer** command:

```
Device# show support omp peer peer-ip 172.16.255.41
================================
            PEERS for CONTEXT 172.16.255.41
================================
 Local address: 172.16.255.41
 Looking up Peer: 172.16.255.5
 Peer: 172.16.255.5 (0x7fd197ee1800), Type: vSmart, Site: 200, Region-id-set: None, Domain:
 1, Overlay: 1, Legit: yes
        State: Up, version: 1, Control-Up: yes, Staging: no, flags: 0x21
        CAP: BR: no, TGW: no
       Multithreading- down: no, move-marker: no, update-gen: no, work-queue: no, needs_upd:
 0x0
        buffer ev: 0x0x7fd197aca580
        fd: 21
        Hello timer: Enabled (e: 2, c: 20, md: 20 lmd: 0)  Hold timer: Enabled (e: 43 v:
60 c: 60)
        Connect retry: Disabled (e: -1 v: 2 c: 2)  Adv. timer: Enabled (e: 1 v: 1 c: 1)
        Down-pending: Disabled (e: -1 v: 1 c: 1)
    EOR interval: 300 EOR timer: Disabled (e: -1 v: 300)

    Force-Send interval: 2 Force-Send timer: Disabled (e: -1 v: 2)

        Rcv cap: Identity MP GR Refresh Security Overlay
        Neg cap: Identity MP GR Refresh Security Overlay
        Rcv afi-safi: TLOC-IPV4 SRVC-IPV4 SRVC-IPV6 ROUTE-IPV4 ROUTE-IPV6 MCAST-IPV4 (2)
LINK CXP (2)
        Neg afi-safi: TLOC-IPV4 SRVC-IPV4 SRVC-IPV6 ROUTE-IPV4 MCAST-IPV4 (2) LINK CXP (2)
        GR-enabled: Enabled, My GR interval: 43200 GR timer: Disabled (e: -1 v: 43200 c:
43200)
        Enter gr: 0, Exit gr: 0, GR mode: FALSE
        site-pol: None route-pol-in: None route-pol-out: None data-pol-in: None
           data-pol-out: None pfr-pol: None mem-pol: None cflowd:None
```

```
        UP time: Wed Feb 16 17:55:50 2022
        Last DOWN time: Thu Jan  1 00:00:00 1970
        Down Event: Invalid, Err code: Invalid, Subcode: 0, Down-pend: no
        UP: 1, DOWN: 0, CONN: 1
        Read before hold: 0, Buf pullups: 13
        Buffer thresholds: 0, upd pkt thresholds: 0
        Nothing Read: 29286, Partial Msg: 132
        Direct pkts: 28429 Direct hello send: 0
        Bad marker: 0 Read error: 0
        Read in down pending: 0, Read in null evbuf: 0
        Enter gr: 0, Exit gr: 0
        Policy received: Complete
       Forwarding policy len: 1346
<app-route-policy>
  <name>_VPN_1_web-ssh-AAR</name>
  <vpn-list>
    <name>VPN_1</name>
    <sequence>
      <seq-value>1</seq-value>
      <match>
        <source-ip>0.0.0.0/0</source-ip>
        <app-list>SSH_policy</app-list>
      </match>
      <action>
        <sla-class>
          <sla-class-name>TEST1</sla-class-name>
          <preferred-color>biz-internet</preferred-color>
        </sla-class>
      </action>
    </sequence>
    <sequence>
      <seq-value>11</seq-value>
      <match>
        <source-ip>0.0.0.0/0</source-ip>
        <app-list>web_services</app-list>
      </match>
      <action>
        <sla-class>
          <sla-class-name>TEST1</sla-class-name>
          <preferred-color>biz-internet</preferred-color>
        </sla-class>
      </action>
    </sequence>
  </vpn-list>
</app-route-policy>
<sla-class>
  <name>TEST1</name>
  <loss>10</loss>
  <latency>100</latency>
  <jitter>10</jitter>
</sla-class>
<lists><vpn-list>
  <name>VPN_1</name>
  <vpn>
    <id>1</id>
  </vpn>
</vpn-list>
<app-list>
  <name>SSH_policy</name>
  <app>
    <name>ssh</name>
  </app>
</app-list>
<app-list>
```

```
  <name>web_services</name>
  <app-family>
    <name>audio_video</name>
  </app-family>
  <app-family>
    <name>instant-messaging</name>
  </app-family>
  <app-family>
    <name>web</name>
  </app-family>
</app-list>
</lists>

        Statistics:

          TLOC-IPV4:
            EOR - TX: 1 RX: 1
            Browse-Done: 1 Force-Send: 0
            received: 20 installed: 0 sent: 2
            ri-cleanup: 0 ro-cleanup: 0 ri-reeval: 0 reeval: 0
            marker-reset: 0 routes-browse: 2121 ri-browsed: 2121 te-changed: 0
            ctx-rib-version: 3150 peer-ro-version: 3150

          TLOC-IPV6:
            EOR - TX: 0 RX: 0
            Browse-Done: 0 Force-Send: 0
            received: 0 installed: 0 sent: 0
            ri-cleanup: 0 ro-cleanup: 0 ri-reeval: 0 reeval: 0
            marker-reset: 0 routes-browse: 0 ri-browsed: 0 te-changed: 0
            ctx-rib-version: 0 peer-ro-version: 0

          SECURITY:
            EOR - TX: 0 RX: 0
            Browse-Done: 0 Force-Send: 0
            received: 0 installed: 0 sent: 0
            ri-cleanup: 0 ro-cleanup: 0 ri-reeval: 0 reeval: 0
            marker-reset: 0 routes-browse: 0 ri-browsed: 0 te-changed: 0
            ctx-rib-version: 0 peer-ro-version: 0

          SRVC-IPV4:
            EOR - TX: 1 RX: 1
            Browse-Done: 1 Force-Send: 0
            received: 0 installed: 0 sent: 4
            ri-cleanup: 0 ro-cleanup: 0 ri-reeval: 0 reeval: 0
            marker-reset: 0 routes-browse: 2 ri-browsed: 4 te-changed: 0
            ctx-rib-version: 4 peer-ro-version: 4

          SRVC-IPV6:
            EOR - TX: 1 RX: 1
            Browse-Done: 1 Force-Send: 0
            received: 0 installed: 0 sent: 0
            ri-cleanup: 0 ro-cleanup: 0 ri-reeval: 0 reeval: 0
            marker-reset: 0 routes-browse: 0 ri-browsed: 0 te-changed: 0
            ctx-rib-version: 0 peer-ro-version: 0

          ROUTE-IPV4:
            EOR - TX: 1 RX: 1
            Browse-Done: 1 Force-Send: 0
            received: 88 installed: 0 sent: 4
            ri-cleanup: 0 ro-cleanup: 0 ri-reeval: 0 reeval: 0
            marker-reset: 0 routes-browse: 364 ri-browsed: 4784 te-changed: 0
            ctx-rib-version: 802 peer-ro-version: 802

          ROUTE-IPV6:
```

```
    EOR - TX: 0 RX: 0
    Browse-Done: 0 Force-Send: 0
    received: 0 installed: 0 sent: 0
    ri-cleanup: 0 ro-cleanup: 0 ri-reeval: 0 reeval: 0
    marker-reset: 0 routes-browse: 0 ri-browsed: 0 te-changed: 0
    ctx-rib-version: 0 peer-ro-version: 0

  MCAST-IPV4:
    EOR - TX: 1 RX: 1
    Browse-Done: 1 Force-Send: 0
    received: 0 installed: 0 sent: 0
    ri-cleanup: 0 ro-cleanup: 0 ri-reeval: 0 reeval: 0
    marker-reset: 0 routes-browse: 0 ri-browsed: 0 te-changed: 0
    ctx-rib-version: 0 peer-ro-version: 0

  MCAST-IPV6:
    EOR - TX: 0 RX: 0
    Browse-Done: 0 Force-Send: 0
    received: 0 installed: 0 sent: 0
    ri-cleanup: 0 ro-cleanup: 0 ri-reeval: 0 reeval: 0
    marker-reset: 0 routes-browse: 0 ri-browsed: 0 te-changed: 0
    ctx-rib-version: 0 peer-ro-version: 0

  LINK:
    EOR - TX: 1 RX: 1
    Browse-Done: 1 Force-Send: 0
    received: 6 installed: 0 sent: 0
    ri-cleanup: 0 ro-cleanup: 0 ri-reeval: 0 reeval: 0
    marker-reset: 0 routes-browse: 355 ri-browsed: 355 te-changed: 0
    ctx-rib-version: 744 peer-ro-version: 680

  CXP:
    EOR - TX: 1 RX: 1
    Browse-Done: 1 Force-Send: 0
    received: 0 installed: 0 sent: 0
    ri-cleanup: 0 ro-cleanup: 0 ri-reeval: 0 reeval: 0
    marker-reset: 0 routes-browse: 0 ri-browsed: 0 te-changed: 0
    ctx-rib-version: 0 peer-ro-version: 0

Packet Statistics:

  hello-tx:          28429   hello-rx:          28426
  handshake-tx:          1   handshake-rx:          1
  alert-tx:              0   alert-rx:              0
  update-tx:            32   update-rx:         2217
  inform-tx:             7   inform-rx:             7
  policy-tx:             0   policy-rx:             3
  total-tx:          28469   total-rx:          30654
```

The following example, executed on a Cisco SD-WAN Controller, shows the TLOC colors that the peer device 10.0.0.15 is advertising—in this case, lte and 3g.

```
vsmart# show support omp peer peer-ip 10.0.0.15 | inc color
ed bitmap: 0xc0, TLOC color supported list: lte 3g
```

show system buffer-pool-status

Display statistics about internal data packet buffers, which are used in the forwarding path.

show system buffer-pool-status

Syntax Description

None

Command History

Release	Modification
17.2	Command introduced.

Example

```
vEdge# show system buffer-pool-status
Pool   Block-Size   Max-Blocks Avail-Blocks
  0            0       655209
  1            0       677233
  2            0         3920
  3            0        10201
  4            0         7982
  5            0         8180
  6            0         6140
  7            0            0
```

Related Topics

show interface queue, on page 281
show interface statistics, on page 290
show system statistics, on page 454

show system netfilter

Display the iptable entries, also called iptable/netfilter entries, on the local device (on vSmart controllers and vManage NMSs only). The netfilter is a kernel module that does packet filtering based on firewall rules.

show system netfilter

Syntax Description

None

Command History

Release	Modification
15.4.3	Command introduced.

Example

```
vSmart# show system netfilter
Chain INPUT (policy ACCEPT 60302 packets, 6353K bytes)
 pkts bytes target     prot opt in     out     source               destination
 4649  391K POLICE     all  --  eth1   *       0.0.0.0/0            0.0.0.0/0
limit: avg 10000/sec burst 1000
 4649  391K POLICE_PROT  all  --  eth1   *       0.0.0.0/0            0.0.0.0/0
 limit: avg 10000/sec burst 1000
   53  5102 LOGGING    all  --  eth1   *       0.0.0.0/0            0.0.0.0/0

Chain POLICE (1 references)
 pkts bytes target     prot opt in     out     source               destination

Chain POLICE_PROT (1 references)
 pkts bytes target     prot opt in     out     source               destination
    0     0 ACCEPT     tcp  --  eth1   *       0.0.0.0/0            0.0.0.0/0
tcp spts:67:68 dpts:67:68
    0     0 ACCEPT     tcp  --  eth1   *       0.0.0.0/0            0.0.0.0/0
tcp spt:53
    0     0 ACCEPT     udp  --  eth1   *       0.0.0.0/0            0.0.0.0/0
udp spt:53
 4596  386K ACCEPT     icmp --  eth1   *       0.0.0.0/0            0.0.0.0/0

Chain LOGGING (1 references)
 pkts bytes target     prot opt in     out     source               destination
   53  5102 LOG        all  --  *      *       0.0.0.0/0            0.0.0.0/0
limit: avg 10/sec burst 5 LOG flags 0 level 6 prefix "IPTables-dropped: "
   53  5102 DROP       all  --  *      *       0.0.0.0/0            0.0.0.0/0
```

Related Topics

iptables-enable

show system on-demand

To display the status of on-demand tunnels, use the **show system on-demand** command in privileged EXEC mode.

show [**sdwan**] **system** **on-demand** [**remote-system**] [**system-ip** *ip-address*]

Syntax Description

sdwan	Include **sdwan** only when using the command on a Cisco IOS XE Catalyst SD-WAN device, not on a Cisco vEdge device.

remote-system	Use **remote-system** to include on-demand tunnel information about all connected devices. For example, if device A has numerous on-demand tunnels configured to other devices, and you use (for a Cisco IOS XE Catalyst SD-WAN device) **show sdwan system on-demand remote-system** on device A, the output includes information for each site that device A is connected to. The information for each site includes whether the site has on-demand tunnels enabled, whether the tunnel to the site is active, inactive, or not in on-demand tunnel mode, and so on. Without this keyword, the command provides only the local status of the device on which the command is executed. For example, if you execute this command on device A, without **remote-system**, the output shows only the local on-demand tunnel status of device A.
system-ip *ip-address*	Displays the output only for the specified device.

Command Default

Not applicable.

Command Modes

Privileged EXEC

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.3.1a Cisco vManage Release 20.3.1	This command was introduced.

Usage Guidelines

Use this command on a hub or spoke device. The output shows the following:

- **SITE-ID**: Site ID.
- **SYSTEM-IP**: IP address of the device.
- **ON-DEMAND**:
  - **yes**: On-demand tunnels are enabled on the device.
  - **no**: On-demand tunnels are not enabled on the device.
- **STATUS**:
  - **active**: The on-demand tunnel to this device is active.
  - **inactive**: The on-demand tunnel to this device is inactive.
  - **not-on-demand**: On-demand tunnels are enabled on the device, but this tunnel is not in on-demand mode because another device at the same multi-home site does not have on-demand tunnels enabled.
- **IDLE-TIMEOUT-CFG(min)**: Configured on-demand tunnel timeout (minutes) for this device.
- **IDLE-TIMEOUT-EXPIRY(sec)**: Seconds before timeout for this on-demand tunnel.

Example

In the following example, **show sdwan system on-demand** is executed on a Cisco IOS XE Catalyst SD-WAN device, so it includes the **sdwan** keyword.

The output shows the on-demand tunnel configuration of the device on which the command was executed, which is at site 800 in the example. On-demand tunnels are enabled.

```
Device#show sdwan system on-demand
SITE-ID    SYSTEM-IP     ON-DEMAND       STATUS     IDLE-TIMEOUT-CFG(min)
-------------------------------------------------------------------------
800        10.0.0.18        yes          active              10
```

Example

In the following example **show sdwan system on-demand remote-system** is executed on a Cisco IOS XE Catalyst SD-WAN device, so it includes the **sdwan** keyword.

The output shows the status of 5 devices at a total of 4 sites. Site 500 is a multi-home site, with 2 devices. Because one of the devices at site 500 (10.0.0.15) does not have on-demand tunnels enabled, the other device at the site (10.0.016) has a status of not-on-demand even though that device has on-demand tunnels enabled.

```
Device#show sdwan system on-demand remote-system
SITE-ID    SYSTEM-IP     ON-DEMAND       STATUS     IDLE-TIMEOUT-EXPIRY(sec)
-------------------------------------------------------------------------
300        10.0.0.11        yes          inactive            -
200        10.0.0.12        no           -                   -
400        10.0.0.14        yes          active              48
500        10.0.0.15        no           -                   -
500        10.0.0.16        yes          not-on-demand       -
```

In the following example, **system-ip** is used to display the status of a single device.

```
Device#show sdwan system on-demand remote-system system-ip 10.0.0.10
SITE-ID    SYSTEM-IP     ON-DEMAND       STATUS     IDLE-TIMEOUT-EXPIRY(sec)
-------------------------------------------------------------------------
400        10.0.0.10       yes          active              33
```

show system statistics

Display system-wide forwarding statistics (on vEdge routers only).

show system statistics [**diff**]

Syntax Description

None	Display all system statistics.
diff	Statistics Changes: Display the changes in statistics since you last issued the **show system statistics** command.

Command History

Release	Modification
14.1	Command introduced.
16.3.2	Add display BFD PMTU statistics.

Example

```
vEdge# show system statistics

                                rx_pkts :      172639782
                               rx_drops :      0
                                 ip_fwd :      123848170
                     ip_fwd_mirror_pkts :      0
                              ip_fwd_arp :      10899
                        ip_fwd_to_egress :      61493879
                     ip_fwd_invalid_oil :      0
                      ip_v6_mcast_drops :      0
              ip_fwd_mcast_invalid_iif :      0
        ip_fwd_mcast_life_exceeded_drops :      0
             rx_mcast_threshold_exceeded :      0
                  ip_fwd_invalid_tun_oil :      0
                rx_mcast_policy_fwd_drops :      0
                rx_mcast_mirror_fwd_drops :      0
                  ip_fwd_null_mcast_group :      0
                         ip_fwd_null_nhop :      210416
                  ip_fwd_unknown_nh_type  :      0
                     ip_fwd_nat_on_tunnel :      0
                           ip_fwd_to_cpu :      25051507
                 ip_fwd_to_cpu_nat_xlates :      0
               ip_fwd_from_cpu_nat_xlates :      0
                  ip_fwd_to_cpu_nat_drops :      0
                ip_fwd_from_cpu_non_local :      0
                           ip_fwd_rx_ipsec :      46576642
                        ip_fwd_mcast_pkts :      0
                            ip_fwd_rx_gre :      0
                      nat_xlate_outbound :      63509046
                nat_xlate_outbound_drops :      966598
                        nat_xlate_inbound :      31683862
                   nat_xlate_inbound_fail :      257
                                 rx_bcast :      9724255
                              cflowd_pkts :      769419
                                 rx_mcast :      28365292
                     rx_mcast_link_local :      28365240
                  rx_mcast_filter_to_cpu :      0
          rx_mcast_filter_to_cpu_and_fwd :      0
                            rx_gre_decap :      0
                            rx_gre_drops :      0
                     rx_gre_policer_drops :      0
                    rx_implicit_acl_drops :      9618739
                           rx_ipsec_decap :      46574988
                       rx_ip6_ipsec_drops :      0
                        rx_sa_ipsec_drops :      0
                       rx_spi_ipsec_drops :      2
                          rx_replay_drops :      545
                rx_replay_integrity_drops :      9
                   rx_next_hdr_ipsec_drops :      0
               rx_mac_compare_ipsec_drops :      0
                   rx_err_pad_ipsec_drops :      0
```

```
    rx_ipsec_policer_drops :      0
         rx_pre_ipsec_pkts :      0
        rx_pre_ipsec_drops :      0
rx_pre_ipsec_policer_drops :      0
        rx_pre_ipsec_decap :      0
       openssl_aes_decrypt :      0
           qat_aes_decrypt :      0
       openssl_gcm_decrypt :      46575030
           qat_gcm_decrypt :      0
        rx_ipsec_bad_inner :      0
              rx_bad_label :      0
         service_label_fwd :      0
         rx_host_local_pkt :      0
      rx_host_mirror_drops :      0
          rx_tunneled_pkts :      0
           rx_cp_non_local :      0
       tx_if_not_preferred :      2
            tx_vsmart_drop :      0
          rx_invalid_port :      0
        port_disabled_rx :      0
          ip_disabled_rx :      0
         rx_invalid_qtags :      44
          rx_non_ip_drops :      892
               rx_ip_errs :      0
           pko_wred_drops :      0
        tx_queue_exceeded :      0
          rx_policer_drops :      0
        rx_policer_remark :      0
            route_to_host :      0
              ttl_expired :      0
            icmp_redirect :      0
            bfd_rx_non_ip :      0
     bfd_tx_record_changed :      41
     bfd_rx_record_invalid :      0
          bfd_rx_parse_err :      0
   rx_arp_rate_limit_drops :      0
    rx_arp_non_local_drops :      47220007
               rx_arp_reqs :      69873
           rx_arp_replies :      760095
             arp_add_fail :      38578773
          unknown_nh_type :      0
          buf_alloc_fails :      0
            ecmp_discards :      0
 app_route_policy_discards :      0
              cbf_discards :      0
              filter_drops :      0
         invalid_back_ptr :      0
        tunnel_loop_drops :      0
     to_cpu_policer_drops :      28046800
            mirror_drops :      0
       split_horizon_drops :      0
            rx_no_tun_if :      0
                 tx_pkts :      155590511
              tx_errors :      0
                tx_bcast :      508522
                tx_mcast :      249169
         port_disabled_tx :      5
           ip_disabled_tx :      0
       tx_fragment_needed :      0
  tx_mcast_fragment_needed :      0
        fragment_df_drops :      0
             tx_fragments :      0
        tx_fragment_drops :      0
         tx_fragment_fail :      0
```

```
      tx_fragment_alloc_fail :      0
         tunnel_pmtu_lowered :      0
                 tx_gre_pkts :      0
                tx_gre_drops :      0
          tx_gre_policer_drops :      0
                 tx_gre_encap :      0
                tx_ipsec_pkts :      46694074
           tx_ipsec_mcast_pkts :      0
            tx_ip6_ipsec_drops :      0
       tx_no_out_sa_ipsec_drops :      0
        tx_zero_spi_ipsec_drops :      0
         tx_no_tunn_ipsec_drops :      0
         tx_ipsec_policer_drops :      0
                tx_ipsec_encap :      46694074
          tx_ipsec_mcast_encap :      0
             tx_pre_ipsec_pkts :      46694074
tx_no_out_sa_pre_ipsec_drops :      0
  tx_no_tunn_pre_ipsec_drops :      0
         openssl_aes_encrypt :      0
             qat_aes_encrypt :      0
         openssl_gcm_encrypt :      46694074
             qat_gcm_encrypt :      0
  tx_pre_ipsec_policer_drops :      0
          tx_pre_ipsec_encap :      46694074
              tx_arp_replies :      69899
                 tx_arp_reqs :      508502
             tx_arp_req_fail :      2
              tx_no_arp_drop :      4
     tx_arp_rate_limit_drops :      5
       tx_icmp_policer_drops :      0
      tx_icmp_mirrored_drops :      0
                 bfd_tx_fail :      0
              bfd_alloc_fail :      0
           bfd_timer_add_fail :      0
                 bfd_tx_pkts :      46385012
                 bfd_rx_pkts :      46278322
              bfd_tx_octets :      7107533768
              bfd_rx_octets :      7104071388
            bfd_pmtu_tx_pkts :      23522
            bfd_pmtu_rx_pkts :      23199
           bfd_pmtu_tx_octets :      29353636
           bfd_pmtu_rx_octets :      8886087
                 bfd_rec_down :      0
              bfd_rec_invalid :      0
                bfd_lkup_fail :      0
        rx_icmp_echo_requests :      0
         rx_icmp_echo_replies :      846060
      rx_icmp_network_unreach :      210414
         rx_icmp_host_unreach :      1109
         rx_icmp_port_unreach :      0
     rx_icmp_protocol_unreach :      0
    rx_icmp_fragment_required :      0
    rx_icmp_dst_unreach_other :      0
          rx_icmp_ttl_expired :      0
             rx_icmp_redirect :      0
           rx_icmp_src_quench :      0
           rx_icmp_bad_ip_hdr :      0
         rx_icmp_other_types :      4398628
       tx_icmp_echo_requests :      602847
         tx_icmp_echo_replies :      0
      tx_icmp_network_unreach :      210416
         tx_icmp_host_unreach :      0
         tx_icmp_port_unreach :      0
     tx_icmp_protocol_unreach :      0
```

```
      tx_icmp_fragment_required :      0
      tx_icmp_dst_unreach_other :      0
            tx_icmp_ttl_expired :      0
               tx_icmp_redirect :      0
             tx_icmp_src_quench :      0
             tx_icmp_bad_ip_hdr :      0
            tx_icmp_other_types :      2
                gre_ka_tx_pkts :      0
                gre_ka_rx_pkts :      0
  gre_ka_tx_ipv4_options_drop :      0
              gre_ka_tx_non_ip :      0
           gre_ka_tx_parse_err :      0
     gre_ka_tx_record_changed :      0
                gre_ka_tx_fail :      0
             gre_ka_alloc_fail :      0
          gre_ka_timer_add_fail :      0
               gre_ka_rx_non_ip :      0
          gre_ka_rx_rec_invalid :      0
                   dot1x_rx_pkts :      0
                   dot1x_tx_pkts :      0
                  dot1x_rx_drops :      0
                  dot1x_tx_drops :      0
 dot1x_vlan_if_not_found_drops :      0
          dot1x_mac_learn_drops :      0
                   dns_req_snoop :      0
                   dns_res_snoop :      0
              redirect_dns_req :      0
                  ctrl_loop_fwd :      0
            ctrl_loop_fwd_drops :      0
            rx_replay_drops_tc0 :      0
            rx_replay_drops_tc1 :      0
            rx_replay_drops_tc2 :      545
            rx_replay_drops_tc3 :      0
            rx_replay_drops_tc4 :      0
            rx_replay_drops_tc5 :      0
            rx_replay_drops_tc6 :      0
            rx_replay_drops_tc7 :      0
            rx_window_drops_tc0 :      0
            rx_window_drops_tc1 :      0
            rx_window_drops_tc2 :      768
            rx_window_drops_tc3 :      0
            rx_window_drops_tc4 :      0
            rx_window_drops_tc5 :      0
            rx_window_drops_tc6 :      0
            rx_window_drops_tc7 :      0
rx_unexpected_replay_drops_tc0 :      0
rx_unexpected_replay_drops_tc1 :      0
rx_unexpected_replay_drops_tc2 :      0
rx_unexpected_replay_drops_tc3 :      0
rx_unexpected_replay_drops_tc4 :      0
rx_unexpected_replay_drops_tc5 :      0
rx_unexpected_replay_drops_tc6 :      0
rx_unexpected_replay_drops_tc7 :      0
 rx_replay_integrity_drops_tc0 :      9
 rx_replay_integrity_drops_tc1 :      0
 rx_replay_integrity_drops_tc2 :      0
 rx_replay_integrity_drops_tc3 :      0
 rx_replay_integrity_drops_tc4 :      0
 rx_replay_integrity_drops_tc5 :      0
 rx_replay_integrity_drops_tc6 :      0
 rx_replay_integrity_drops_tc7 :      0
        icmp_redirect_tx_drops :      0
        icmp_redirect_rx_drops :      0
```

Related Topics

clear system statistics, on page 61
show app log flow-count, on page 177
show app log flows, on page 178
show system buffer-pool-status, on page 450
show tunnel statistics, on page 472

show system status

Display time and process information for the device, as well as CPU, memory, and disk usage data.

show system status

Syntax Description

None

Command History

Release	Modification
14.1	Command introduced.
15.3	Changed format of command output for vEdge 100 routers.
15.4	Changed format of command output changed for all devices.
16.3.2	Added system state field to output on vEdge routers.
17.1	Added CPU-reported reboot field to output on hardware vEdge routers.
17.2	Added CPU allocation field to output on hardware vEdge routers; added FIPS state.

Examples

Example 1

In Releases 17.1 and later:

```
vEdge# show system status

Cisco SD-WAN (tm) vedge Operating System Software
Copyright (c) 2013-2018 by Cisco, Inc.
Version: 17.1.0

System logging to host is disabled
System logging to disk is enabled

System state:            GREEN. All daemons up
System FIPS state:       Enabled
```

```
Last reboot:             Initiated by user - activate 17.1.0.
CPU-reported reboot:     Warm
Boot loader version:     U-Boot 2013.07-ga9b015 (Build time: May 12 2016 - 13:58:12)

System uptime:           0 days 03 hrs 27 min 26 sec
Current time:            Tue Mar 28 12:59:02 PDT 2017

Load average:            1 minute: 0.11, 5 minutes: 29, 15 minutes: 38
Processes:               241 total
CPU allocation:          32 total,   3 control,   29 data,   1 tcpd
CPU states:              11.00% user,   10.10% system,   78.90% idle
Memory usage:            2973024K total,    752796K used,   1865932K free
                         65348K buffers,  288948K cache

Disk usage:              Filesystem      Size   Used  Avail   Use %  Mounted on
                         /dev/root       3621M  82M  2595M    24%   /

Personality:             vedge
Model name:              vedge-1000
Services:                None
vManaged:                false
Commit pending:          false
Configuration template:  None
```

Example 2

In Releases 16.3.2 and later:

```
vEdge# show system status

Cisco SD-WAN (tm) vedge Operating System Software
Copyright (c) 2013-2018 by Cisco, Inc.
Version: 16.3.1

System logging to host is disabled
System logging to disk is enabled

System state:            GREEN. All daemons up

Last reboot:             Unknown.
Boot loader version:     Not applicable

System uptime:           0 days 10 hrs 30 min 31 sec
Current time:            Mon Feb 06 20:13:54 PST 2017

Load average:            1 minute: 0.01, 5 minutes: 0.05, 15 minutes: 0.05
Processes:               150 total
CPU allocation:          2 total,   1 control,   1 data
CPU states:              2.40% user,   3.00% system,   94.60% idle
Memory usage:            879624K total,    551036K used,   64176K free
                         88772K buffers,  175640K cache

Disk usage:              Filesystem      Size   Used  Avail   Use %  Mounted on
                         /dev/root       7551M  26M  7099M   0%   /

Personality:             vedge
Model name:              vedge-cloud
Services:                None
vManaged:                false
Commit pending:          false
Configuration template:  None
```

Example 3

In Releases 15.4 and later for all Cisco vEdge devices, and in Release 15.3 for vEdge 100 routers only:

```
vEdge# show system status
Cisco SD-WAN (tm) vedge Operating System Software
Copyright (c) 2013-2016 by Cisco, Inc.
Version: 16.1.0
System logging to host  is disabled
System logging to disk is enabled

Last reboot:             Unknown.
Boot loader version:     Not applicable
System uptime:           0 days 04 hrs 39 min 42 sec
Current time:            Wed May 04 15:56:58 PDT 2016

Load average:            1 minute: 1.05, 5 minutes: 1.11, 15 minutes: 1.18
Processes:               229 total
CPU allocation:          2 total,   1 control,   1 data
CPU states:              83.40% user,   13.30% system,   0.00% idle
Memory usage:            753940K total,    408692K used,   180744K free
                         26412K buffers,  138092K cache

Disk usage:              Filesystem      Size   Used  Avail   Use %  Mounted on
                         /dev/root       7679M  26M  7227M   0%   /

Personality:             vedge
Model name:              vedge-cloud
Services:                None
vManaged:                false
Commit pending:          false
Configuration template:  None

vSmart# show system status

Cisco SD-WAN (tm) vsmart Operating System Software
Copyright (c) 2013-2016 by Cisco, Inc.
Version: 16.1.0

System logging to host  is disabled
System logging to disk is enabled

Last reboot:             Unknown.
Boot loader version:     Not applicable
System uptime:           0 days 04 hrs 43 min 26 sec
Current time:            Wed May 04 16:00:19 PDT 2016

Load average:            1 minute: 0.01, 5 minutes: 0.06, 15 minutes: 0.08
Processes:               202 total
CPU states:              0.30% user,   1.30% system,   98.20% idle
Memory usage:            496720K total,    208256K used,   173712K free
                         20348K buffers,  94404K cache

Disk usage:              Filesystem      Size   Used  Avail   Use %  Mounted on
                         /dev/root       7679M  35M  7218M   0%   /

Personality:             vsmart
Model name:              vsmart
Services:                None
vManaged:                false
Commit pending:          false
Configuration template:  None
```

```
Policy template:         None
Policy template version: None
```

Example 4

In Releases 15.3 and earlier for all Cisco vEdge devices except vEdge 100 routers:

```
vEdge# show system status

Cisco SD-WAN (tm) vedge Operating System Software
Copyright (c) 2013-2015 by Cisco, Inc.
Version: 15.3.4

System logging to host  is disabled
System logging to disk is enabled

Last reboot:             .
System uptime:           0 days 10 hrs 34 min 41 sec
Current time:            Tue Nov 03 22:11:43 PST 2015

Load average:            1 minute: 0.03   5 minutes: 0.04   15 minutes: 0.05
Processes:               106 total, 4 running
CPU states:              1.70% user,   1.70% system,   96.60% idle
Memory usage:            757304K total,    336244K used,   216656K free
                         83032K buffers,  121372K cache

Disk usage:              Filesystem      Size  Used  Avail  Use%  Mounted on
                         /dev/root       9.0G  895M  8.1G   10%   /

Personality:             vedge
Services:                None
vManaged:                false
Commit pending:          false

vSmart# show system status

Cisco SD-WAN (tm) vsmart Operating System Software
Copyright (c) 2013-2015 by Cisco, Inc.
Version: 15.3.2

System logging to host  is disabled
System logging to disk is enabled

Last reboot:             .
System uptime:           0 days 06 hrs 52 min 52 sec
Current time:            Wed Sep 23 17:36:45 PDT 2015

Load average:            1 minute: 0.00   5 minutes: 0.01   15 minutes: 0.05
Processes:               88 total, 1 running
CPU states:              0.80% user,   0.70% system,   98.30% idle
Memory usage:            500948K total,    185108K used,   205828K free
                         51808K buffers,  58204K cache

Disk usage:              Filesystem      Size  Used  Avail  Use%  Mounted on
                         /dev/root       5.1G  893M  4.2G   18%   /

Personality:             vsmart
Services:                None
vManaged:                false
Commit pending:          false
Configuration template:  None
```

```
Policy template:         None
Policy template version: None
```

Related Topics

show reboot history, on page 422
show uptime, on page 474
show version, on page 476

show tech-support

To display general information about the Cisco SD-WAN devices, use the **show tech-support** command in the privileged EXEC mode.

show tech-support

Syntax Description

This command has no arguments or keywords.

Command Default

NA

Command Modes

Privileged EXEC

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1r	Command introduced to display the admin-tech and memory details.

Usage Guidelines

When a Cisco device reboots, it collects system status information in a compressed tar file to aid in troubleshooting and diagnostics. The tar file is saved in your system's home directory and contains the following information:

- output of commands
- content of files on the local device
- core files
- syslog files for each process
- configuration rollback files

This command is useful for collecting a large amount of information about devices for troubleshooting. The output of this command can be provided to technical support representatives when reporting a problem. The command output displays the output of a number of show commands at once. The output from this command varies depending on your platform and configuration. Where as, the command **request admin-tech** collects all system status information, including core files, log files, and the process (daemon) and operational-related files that are stored in the /var/tech directory on the local device. For more information on **admin-tech** command, see request admin-tech. The **show tech-support** command displays the output from the following **show** commands, as listed in the order below:

- show platform

- show platform software status control-processor brief
- show platform resources
- show memory statistics history
- show memory allocating-process total
- show process memory sorted
- show process memory platform sorted
- show memory lite-chunks totals
- show buffer
- show buffer usage
- show region
- show memory dead totals
- show chunk brief

Example

The following is sample output from the **show tech-support** command. Following are the excerpts from /var/tech/ios file extracted from the admin-tech tar file which shows that the corresponding command output is captured in admin-tech.

```
Device# show tech-support
------------------ show tech-support memory ------------------


------------------ show clock ------------------


*05:25:59.689 UTC Wed May 29 2019


------------------ show version ------------------

Cisco IOS Software [Gibraltar], Virtual XE Software (X86_64_LINUX_IOSD-UCMK9-M),,
 Experimental Version 17.1.20190425:094712 [polaris_dev-/nobackup/saajanap/polarr
is_Apr25 105]
Copyright (c) 1986-2019 by Cisco Systems, Inc.


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licensed under the GNU General Public License ("GPL") Version 2.0.  The


------------------ show sdwan confd-log netconf-trace ------------------

No log to display


------------------ show umbrella config -----------------
```

show tenant-mapping

On a Cisco vBond Orchestrator, to view the mapping of tenants to multitenant Cisco vSmart Controllers, use the **show tenant-mapping** command.

show tenant-mapping [*vSmart-serial-number*]

Syntax Description

[*vSmart-serial-number*]	(Optional) Specify the serial number of a specific Cisco vSmart Controller to view the tenants assigned to it.

Command Default

None

Command Modes

#

Command History

Release	Modification
Cisco SD-WAN Release 20.4.1	Command introduced.

Example

```
vBond# show tenant-mapping
VSMART
SERIAL

NUM       TENANT NAMES                                                                    TENANT COUNT
-------------------------------------------------------------------------------------------------
12345990  [ "multitenancy-Customer6" "multitenancy-Customer4" "multitenancy-Customer3"
"multitenancy-Customer1" ]  4
12345992  -
                          0
12345994  [ "multitenancy-Customer6" "multitenancy-Customer5" "multitenancy-Customer3"
"multitenancy-Customer2" ]  4
12345997  -
                          0
12345998  -
                          0
12346001  [ "multitenancy-Customer5" "multitenancy-Customer4" "multitenancy-Customer2"
"multitenancy-Customer1" ]  4
```

show tenant omp peers

To view information about the OMP peering sessions that are active on the multitenant Cisco vSmart Controller for a particular tenant, use the **show tenant** *tenant-name* **omp peers** command.

show tenant *tenant-name* **omp peers** [*peer-ip-address*] [**detail**]

Syntax Description

tenant-name	Specify the name of a tenant assigned to the multitenant Cisco vSmart Controller.
peer-ip-address	(Optional) View OMP peering session information for a specific peer.

detail	(Optional) View detailed information.

Command Default

None

Command Modes

#

Command History

Release	Modification
Cisco SD-WAN Release 20.4.1	Command introduced.

Example

```
vSmart# show tenant multitenancy-Customer1 omp peers
R -> routes received

I -> routes installed

S -> routes sent


                        DOMAIN    OVERLAY   SITE
PEER             TYPE   ID        ID        ID        STATE    UPTIME           R/I/S
-----------------------------------------------------------------------------------------
172.16.255.14    vedge  1         1         400       up       23:09:40:04      4/0/0
172.16.255.15    vedge  1         1         500       up       0:14:33:55       0/0/0
172.16.255.24    vsmart 1         1         103       up       44:06:36:31      4/0/4
```

show tenant omp routes

To view information about information about OMP routes for a tenant on a multitenant Cisco vSmart Controller, use the **show tenant** *tenant-name* **omp routes** command.

show tenant *tenant-name* **omp routes** [**family** *family-address*] [**vpn** *vpn-id*] [*prefix* | *ip-address*] [**advertised** | **received**] [**detail**]

Syntax Description

tenant-name	Specify the name of a tenant assigned to the multitenant Cisco vSmart Controller.
prefix	(Optional) Lists OMP route information for the specified route prefix.
ip-address	(Optional) Displays IP address of specific route.
family*family-address*	Lists OMP route information for the specified IP family. *family-address* can be **ipv4** or **ipv6**.

vpn*vpn-id*	Lists the OMP routes for the specified VPN.
detail	Lists detailed route information about OMP peering sessions.

Command Default

None

Command Modes

#

Command History

Release	Modification
Cisco SD-WAN Release 20.4.1	Command introduced.

Example

```
vSmart# show tenant multitenancy-Customer1 omp routes


---------------------------------------------------

omp route entries for vpn 1 route 172.16.33.0/24

---------------------------------------------------

            RECEIVED FROM:

peer            172.16.255.14

path-id         66

label           1005

status          C,R

loss-reason     not set

lost-to-peer    not set

lost-to-path-id not set

    Attributes:

     originator       172.16.255.14

     type             installed

     tloc             172.16.255.14, mpls, ipsec

     ultimate-tloc    not set

     domain-id        not set

     overlay-id       1

     site-id          400

     region-id        None
```

```
     region-path      65534
     preference       not set
     tag              not set
     origin-proto     connected
     origin-metric    0
     as-path          not set
     community        not set
     unknown-attr-len not set
...
```

show tenant-summary

To view information about the tenants assigned to a multitenant Cisco vSmart Controller, use the **show tenant-summary** command.

show tenant-summary [**max-tenants** | **num-active-tenants** | **tenant-org-names** [*tenant-name*] [**detail**] | **detail**]

Syntax Description

max-tenants	View the maximum number of tenants that can be assigned to the Cisco vSmart Controller.
num-active-tenants	View the number of tenants assigned to the Cisco vSmart Controller.
tenant-org-names[*tenant-name*][**detail**]	Enter only the **tenant-org-names** argument to view information on the tenants assigned to the Cisco vSmart Controller, and the tenant and VPN IDs for each tenant. (Optional) Enter a tenant name along with **tenant-org-names** to view information about a specific tenant. (Optional) Enter the **detail** keyword for more detailed information for all or one of the tenants assigned to the Cisco vSmart Controller.
detail	Enter the **detail** keyword for detailed information for all the tenants assigned to the Cisco vSmart Controller.

Command Default

None

Command Modes

#

Command History

Release	Modification
Cisco SD-WAN Release 20.4.1	Command introduced.

Example

```
vSmart# show tenant-summary
tenant-summary max-tenants 24
tenant-summary num-active-tenants 4
                                    TENANT  TENANT
TENANT ORG NAME                     ID      VPN ID
-------------------------------------------------
multitenancy-Customer1              1       1003
multitenancy-Customer2              2       1004
multitenancy-Customer3              3       1005
multitenancy-Customer4              4       1006
```

show transport connection

Display the status of the DTLS connection to a vBond orchestrator (on vEdge routers and vSmart controllers only).

show transport connection

show transport connection [*ip-address*] [**history** [*index* [**state** *state*]]]

Syntax Description

history [*index*]	Connection History and Index: Display the complete connection history or the connection history of a specific indexed item.
state *state*	Connection State: Display connections with the specified state. *state* can be **up** or **down**.
ip-address	vBond Address: IP address of the vBond orchestrator or the DNS name that points to the vBond orchestrator.

Command History

Release	Modification
14.1	Command introduced.

Example

```
vEdge# show transport connection

ADDRESS       HOST               INDEX  TIME                       STATE
-----------------------------------------------------------------------
10.11.12.123  vbond.viptela.com  100    Thu Mar 27 17:35:15 2014  up
                                 99     Thu Mar 27 17:35:13 2014  down
                                 98     Wed Mar 26 11:20:58 2014  up
                                 97     Wed Mar 26 11:16:46 2014  down
                                 96     Wed Mar 26 08:05:24 2014  up
                                 95     Wed Mar 26 08:05:23 2014  down
                                 94     Sun Mar 23 20:20:24 2014  up
```

```
                                      93      Sun Mar 23 20:20:22 2014  down
                                      92      Fri Mar 21 16:50:24 2014  up
                                      91      Fri Mar 21 16:50:22 2014  down
50.51.52.111  vbond.viptela.com       76      Thu Mar 27 19:51:51 2014  up
                                      75      Thu Mar 27 19:51:49 2014  down
                                      74      Thu Mar 27 17:35:16 2014  up
                                      73      Thu Mar 27 17:35:14 2014  down
                                      72      Thu Mar 27 14:05:42 2014  up
                                      71      Thu Mar 27 14:05:40 2014  down
                                      70      Thu Mar 27 09:12:54 2014  up
                                      69      Thu Mar 27 09:12:52 2014  down
                                      68      Thu Mar 27 03:25:27 2014  up
                                      67      Thu Mar 27 03:25:25 2014  down
```

Related Topics

track-transport

show tunnel gre-keepalives

Display information about the keepalive packets transmitted and received on GRE tunnels that originate on the local router (on vEdge routers only).

show tunnel gre-keepalives [*vpn-id*]

Syntax Description

None	Display keepalive information for all GRE tunnels.
vpn-id	Specific VPN: Display keepalive information for GRE tunnels in a specific VPN.

Command History

Release	Modification
15.4.1	Command introduced.

Example

```
vEdge# show tunnel gre-keepalives

                                                                  REMOTE   REMOTE
     IF                                    ADMIN  OPER   KA       TX       RX       TX       RX       TX       RX
VPN  NAME  SOURCE IP  DEST IP             STATE  STATE  ENABLED  PACKETS  PACKETS  PACKETS  PACKETS  ERRORS   ERRORS  TRANSITIONS
-------------------------------------------------------------------------------------------------------------------------------
0    gre1  10.0.5.11  172.168.1.1         up     down   true     0        0        370      0        0        0       0
0    gre2  10.0.5.11  172.168.122.11      up     down   true     0        0        644      0        0        0       0
```

Related Topics

keepalive
show interface, on page 265
show tunnel statistics, on page 472
tunnel-destination
tunnel-source

show tunnel inbound-connections

Display information about the IPsec tunnel connections that originate on the local router, showing the TLOC addresses for both ends of the tunnel (on vEdge routers only).

In Releases 15.2 and later, this command has been renamed to **show ipsec outbound-connections**.

show tunnel inbound-connections

show tunnel inbound-connections *local-tloc-address* [*local-color* [*remote-tloc-address* [*remote-color* [(**dest-ip** | **dest-port** | **source-ip** | **source-port**)]]]]

Syntax Description

None	Display information for all the IPsec connections that originate on the vEdge router. The tunnel connections are listed in order according to the local TLOC address.
local-tloc-address [*local-color* [*remote-tloc-address* [*remote-color* [(**dest-ip** | **dest-port** | **source-ip** | **source-port**)]]]]	Specific Tunnel Connection: Display information for a specific IPsec connection.

Command History

Release	Modification
14.1	Command introduced.
15.2	Command renamed to **show ipsec outbound-connections**

Example

```
vEdge# show tunnel inbound-connections
SOURCE           SOURCE  DEST            DEST    REMOTE           REMOTE           LOCAL            LOCAL
IP               PORT    IP              PORT    TLOC ADDRESS     TLOC COLOR       TLOC ADDRESS     TLOC COLOR
-------------------------------------------------------------------------------------------------------------
10.1.14.14       12350   10.0.5.11       12346   172.16.255.14    lte              172.16.255.11    lte
10.1.15.15       12346   10.0.5.11       12346   172.16.255.15    lte              172.16.255.11    lte
10.1.16.16       12346   10.0.5.11       12346   172.16.255.16    lte              172.16.255.11    lte
10.0.5.21        12346   10.0.5.11       12346   172.16.255.21    lte              172.16.255.11    lte
```

Related Topics

show tunnel local-sa, on page 471
show ipsec outbound-connections, on page 313

show tunnel local-sa

Display the IPsec tunnel security associations for the local TLOCs (on vEdge routers only).

In Releases 15.2 and later, this command has been renamed to **show ipsec local-sa**.

show tunnel local-sa

show tunnel local-sa *tloc-address* [*color* [**spi** [(**auth-key-hash** | **encrypt-key-hash** | **ip** | **port**)]]]]

Syntax Description

None	Display information for all the IPsec tunnels that originate on the router. The tunnel connections are listed in order according to the local TLOC address.
tloc-address [*color* [**spi** [(**auth-key-hash** | **encrypt-key-hash** | **ip** | **port**)]]]]	Specific SA: Display information for a specific security association.

Command History

Release	Modification
14.1	Command introduced.
15.2	Command renamed to **show ipsec local-sa**.

Example

```
vEdge# show tunnel local-sa
                                                SOURCE           SOURCE
TLOC ADDRESS     TLOC COLOR       SPI     IP               PORT    KEY HASH
-------------------------------------------------------------------------------
172.16.255.15    lte              260     10.1.15.15       12346   *****0979
```

Related Topics

rekey
request security ipsec-rekey, on page 141
show tunnel inbound-connections, on page 471
show ipsec outbound-connections, on page 313

show tunnel statistics

Display information about the packets transmitted and received on the data plane tunnels that originate on the local router (on vEdge routers only).

show tunnel statistics

show tunnel statistics bfd

show tunnel statistics dest-ip *ip-address*

show tunnel statistics dest-port *port-number*

show tunnel statistics ipsec

show tunnel statistics source-ip *ip-address*

show tunnel statistics source-port *port-number*

show tunnel statistics tunnel-protocol (**gre** | **ipsec**)

Syntax Description

None	Display statistics for all data plane tunnels, for both IPsec and GRE tunnels. Note that the output fields are specific for IPsec, so for GRE tunnels, the values for all fields are zero or empty.
bfd	BFD Tunnels: Display statistics for all BFD tunnels.
dest-ip *ip-address***dest-port** *port-number*	Destination IP Address or Port: Display statistics for the specified destination address or destination port number.
ipsec	IPsec Tunnels: Display statistics for IPsec tunnels.
source-ip *ip-address***source-port** *port-number*	Source IP Address or Port: Display statistics for the specified source address or source port number.
tunnel-protocol (**gre** | **ipsec**)	Tunnel Protocol: Display tunnel statistics for either GRE or IPsec tunnels. To display the count of data packets, use the **show interface** command. To display the count of only GRE keepalive packets, use the **show tunnel gre-keepalives** command.

Command History

Release	Modification
14.1	Command introduced.
15.4.1	Added support for GRE tunnels.
16.3.2	Added **bfd** option and display BFD hello and PMTU packet statistics.

Example

Example 1

```
vEdge# show tunnel statistics
                                                                                                                                                TCP
TUNNEL                              SOURCE  DEST                 LOCAL  REMOTE  TUNNEL                                                      MSS
PROTOCOL  SOURCE IP   DEST IP       PORT    PORT   SYSTEM IP     COLOR  COLOR   MTU     tx-pkts  tx-octets  rx-pkts  rx-octets  ADJUST
-------------------------------------------------------------------------------------------------------------------------------------------
ipsec     10.1.15.15  10.0.5.11   12366   12366  172.16.255.11 lte    lte     1441    31726    4895251    31723    5341408    1361
ipsec     10.1.15.15  10.0.5.21   12366   12366  172.16.255.21 lte    lte     1441    31712    4896936    31712    5339686    1361
ipsec     10.1.15.15  10.1.14.14  12366   12366  172.16.255.14 lte    lte     1441    31730    4899623    31727    5344598    1361
ipsec     10.1.15.15  10.1.16.16  12366   12366  172.16.255.16 lte    lte     1441    31723    4895980    31723    5338796    1361
```

Example 2

```
vEdge# show tunnel statistics bfd
                                                BFD    BFD                        BFD    BFD    BFD      BFD
                                                ECHO   ECHO   BFD      BFD        PMTU   PMTU   PMTU     PMTU
TUNNEL                              SOURCE  DEST  TX     RX     ECHO TX  ECHO RX   TX     RX     TX       RX
PROTOCOL  SOURCE IP   DEST IP       PORT    PORT  PKTS   PKTS   OCTETS   OCTETS    PKTS   PKTS   OCTETS   OCTETS
-----------------------------------------------------------------------------------------------------------------
ipsec     10.1.15.15  10.0.5.11   12366   12366 32284  32281  2663437  2663186   42     42     33220    31981
ipsec     10.1.15.15  10.0.5.21   12366   12366 32267  32267  2662031  2662024   45     45     37623    32407
```

```
ipsec     10.1.15.15  10.1.14.14  12366   12366  32283  32280  2663358  2663100  47    47    37917   35002
ipsec     10.1.15.15  10.1.16.16  12366   12366  32282  32282  2663265  2663265  41    41    34228   29273
```

Related Topics

clear tunnel statistics, on page 63
show interface, on page 265
show system statistics, on page 454
show tunnel gre-keepalives, on page 470

show umbrella deviceid

To display the Umbrella registration status, for Cisco IOS XE Catalyst SD-WAN devices, use the **show umbrella deviceid** command.

show umbrella deviceid

Syntax Description

This command has no arguments or keywords.

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1r	This command was introduced.

Examples

The command displays a table with the registration details:

Column	Description
VRF	Virtual routing forwarding (VRF) instance.
Tag	VPN number from which registration is successful.
Status	Created or Unsuccessful.
Device-id	Unique number associated with the registration.

```
Device# show umbrella deviceid
Device registration details
VRF                     Tag             Status          Device-id
1                       vpn1            201 CREATED     ab00f5cee26f962e
```

show uptime

Show how long the system has been running. This command is the same as the UNIX **uptime** command.

show uptime

Syntax Description

None

Command History

Release	Modification
14.1	Command introduced.

Example

```
vEdge# show uptime
16:34:32 up  6:29,  1 user,  load average: 0.04, 0.05, 0.05
```

Related Topics

show system status, on page 459

show users

Display the users currently logged in to the device.

show users

vManage Equivalent

For all Cisco vEdge devices:

Monitor > **Network** > **Real Time** > **Users**

Syntax Description

None

Command History

Release	Modification
14.1	Command introduced.

Example

Example

```
vEdge# show users

                                          AUTH
SESSION  USER   CONTEXT  FROM      PROTO  GROUP      LOGIN TIME
```

```
--------------------------------------------------------------------------------
96       admin  cli      10.0.1.1  ssh    netadmin   2014-07-24T14:57:43+00:00
```

Related Topics

aaa

request aaa unlock-user, on page 96

show version

Display the active version of the Cisco SD-WAN software running on the device.

show version

Syntax Description

None

Command History

Release	Modification
14.1	Command introduced.

Example

Example

```
vEdge# show version
15.3.3
```

Related Topics

request software install, on page 143

show vrrp

Display information about the configured VRRP interfaces and groups (on vEdge routers only).

show vrrp [**interfaces** *interface-name*] [**groups** *group-number* [*vrrp-parameter*]]

show vrrp vpn *vpn-id* [**interfaces** *interface-name*] [**groups** *group-number* [*vrrp-parameter*]]

Syntax Description

	None: Display information about all VRRP interfaces and groups configured on the local vEdge router, for all VPNs.
interfaces *interface-name*	Interface: Display VRRP information for a specific interface.
vpn *vpn-id*	VPN: Refresh the dynamic ARP cache entries for the specific VPN.

groups *group-number*	VRRP Group: Display information for a specific VRRP group.
groups *group-number* *vrrp-parameter*	VRRP Parameter: Display information about a specific VRRP parameter in a VRRP group. *vrrp-parameter* can be one of the following, which correspond to the header fields in the **show vrrp** output: • **advertisement-timer** [*number*] • **last-state-change-time** [*ccyy-mm-ddthh:mm:ss*] • **master-down-timer** [*number*] • **omp-state** [**down** | **up**] • **prefix-list-state** [**resolved** | **unresolved**] • **priority** [*number*] • **track-prefix-list** [*prefix-list-name*] • **virtual-ip** [*ip-address*] • **virtual-mac** [*mac-address*] • **vrrp-state** [**backup** | **init** | **master**]

Command History

Release	Modification
14.1	Command introduced.

Related Topics

show interface, on page 265
vrrp

show wlan clients

Display information about the clients on the wireless WAN (on vEdge routers only).

show wlan clients [*vap-number*]

Syntax Description

vap-number	Specific VAP: Display information about the clients connected to a specific virtual access point.

Command History

Release	Modification
16.3	Command introduced.

Example

Example

Example

Display information about all clients connected to all VAPs on the WLAN:

```
vEdge# show wlan clients

      CLIENT                                                 CHANNEL    DATA       RX           ASSOC
VAP   ID       MAC                MODE       BAND   CHANNEL  BANDWIDTH  SECURITY   RATE   RSSI  TIME
-------------------------------------------------------------------------------------------------------
vap0  0        50:50:50:50:50:50  802.11ac   5 GHz  36       80         none       175    11    00:11:43
vap0  1        50:50:50:50:50:53  802.11ac   5 GHz  36       80         none       175    11    00:11:43
vap0  2        50:50:50:50:50:56  802.11ac   5 GHz  36       80         none       175    11    00:11:43
vap0  3        50:50:50:50:50:59  802.11ac   5 GHz  36       80         none       175    11    00:11:43
vap0  4        50:50:50:50:50:51  802.11ac   5 GHz  36       80         none       175    11    00:11:43
vap0  5        50:50:50:50:50:54  802.11ac   5 GHz  36       80         none       175    11    00:11:43
vap0  6        50:50:50:50:50:57  802.11ac   5 GHz  36       80         none       175    11    00:11:43
vap0  7        50:50:50:50:50:52  802.11ac   5 GHz  36       80         none       175    11    00:11:43
vap0  8        50:50:50:50:50:55  802.11ac   5 GHz  36       80         none       58     11    00:11:43
vap0  9        50:50:50:50:50:58  802.11ac   5 GHz  36       80         none       58     11    00:11:43
```

Related Topics

show interface, on page 265
show wlan interfaces, on page 478
show wlan radios, on page 479

show wlan interfaces

Display information about the virtual access point (VAP) interfaces (on vEdge routers only).

Note The **show interface** command displays no information about VAP interfaces.

show wlan interfaces [**detail**] [*vap-id*]

detail	Detailed VAP Interface Information: Display detailed information about the VAP interfaces.
vap-id	Specific VAP: Display information about a specific virtual access point.

Command History

Release	Modification
16.3	Command introduced.

Examples

Example 1

Display regular and detailed information about all the VAP interfaces on the WLAN:

```
vEdge# show wlan interfaces
                                                                    MGMT                    ADMIN   OPER    NUM
VAP   SSID                BSSID              DATA SECURITY        SECURITY  BAND   MODE     STATUS  STATUS  CLIENTS
-------------------------------------------------------------------------------------------------------------------
vap0  tb3l_pm6_5ghz_vap0  80:b7:09:08:b7:6a  none                 none      5 GHz  802.11ac  Up     Up      0
vap1  tb3l_pm6_5ghz_vap1  80:b7:09:08:b7:6b  wpa/wpa2-enterprise  none      5 GHz  802.11ac  Up     Up      0
vap2  tb3l_pm6_5ghz_vap2  80:b7:09:08:b7:6c  wpa/wpa2-personal    optional  5 GHz  802.11ac  Up     Up      8
vap3  tb3l_pm6_5ghz_vap3  80:b7:09:08:b7:6d  wpa2-enterprise      optional  5 GHz  802.11ac  Up     Up      0

vEdge# show wlan interfaces detail
                                                                    MGMT                                    BIT   TX     MAX      ADMIN   OPER    NUM
VAP   SSID                BSSID              DATA SECURITY        SECURITY  BAND   MODE      DESCRIPTION   RATE  POWER  CLIENTS  STATUS  STATUS  CLIENTS
-------------------------------------------------------------------------------------------------------------------------------------------------------
vap0  tb3l_pm6_5ghz_vap0  80:b7:09:08:b7:6a  none                 none      5 GHz  802.11ac  -             1300  25     50       Up      Up      0
vap1  tb3l_pm6_5ghz_vap1  80:b7:09:08:b7:6b  wpa/wpa2-enterprise  none      5 GHz  802.11ac  -             1300  25     20       Up      Up      0
vap2  tb3l_pm6_5ghz_vap2  80:b7:09:08:b7:6c  wpa2-personal        optional  5 GHz  802.11ac  -             1300  25     24       Up      Up      8
vap3  tb3l_pm6_5ghz_vap3  80:b7:09:08:b7:6d  wpa2-enterprise      optional  5 GHz  802.11ac  -             1300  25     18       Up      Up      0
```

Example 2

Display information about a specific VAP:

```
vEdge# show wlan interfaces

                                                 MGMT                          ADMIN    OPER     NUM
VAP   SSID   BSSID              DATA SECURITY    SECURITY  BAND    MODE        STATUS   STATUS   CLIENTS
-----------------------------------------------------------------------------------------------------
vap0  test   80:b7:09:01:39:0a  wpa2-enterprise  none      5 GHz   802.11ac    Up       Up       0
vap1  test2  80:b7:09:01:39:0b  wpa2-personal    none      5 GHz   802.11ac    Up       Up       1

vEdge# show wlan interfaces vap1

vap1 :
      IEEE 802.11ac  5 GHz SSID: test2
      Admin status: Up, Oper status: Up
      BSSID: 80:b7:09:01:39:0b
      Data security: wpa2-personal
      Management security: none
      Description:
      Bit rate: 1300 Mbps
      Transmit power: 25 dBm
      Active clients: 1, Max clients: 25
```

Related Topics

show interface, on page 265
show wlan clients, on page 477
show wlan radios, on page 479

show wlan radios

Display information about the WLAN radios (on vEdge routers only).

show wlan radios [*radio-name* [*parameter*]]

Syntax Description

	None: Display information about all WLAN radios.
radio-name [*parameter*]	Specific Radio: Display information about a specific radio and about a specific radio parameter. *parameter* can be one of the column heads in the output of the regular **show wlan radios** command.

Command History

Release	Modification
16.3	Command introduced.

Examples

Example 1

Display information about all WLAN radios:

```
vEdge# show wlan radios

RADIO                                                                CHANNEL              GUARD
NAME    MODE       BAND   MAC                COUNTRY        CHANNEL  BANDWIDTH  FREQUENCY  INTERVAL  VAPS
-------------------------------------------------------------------------------------------------------------
wifi0  802.11ac  5 GHz  80:b7:09:08:b7:6a  United States  36       80         5180       400       4
```

Example 2

Display information about a specific radio:

```
vEdge# show wlan radios wifi0
wifi0 :
      IEEE 802.11ac  5 GHz  80 MHz
      MAC address: 80:b7:09:08:b7:6a
      Channel: 36 Frequency: 5180 MHz
      Regulatory country: United States
      Guard interval: 400 ns
      Number of VAPs: 4

vEdge# show wlan radios wifi0 ?
Description: Display WLAN radio information
Possible completions:
  band                Radio band
  channel             Radio channel
  channel-bandwidth   Channel bandwidth, in MHz
  country             Regulatory country code
  frequency           Frequency, in MHz
  guard-interval      Guard interval, in nanoseconds
  mac                 MAC address in aa:bb:cc:dd:ee:ff format
  mode                Radio mode
  vaps                Number of virtual access point interfaces
  |                   Output modifiers

vEdge# show wlan radios wifi0 country
country "United States"
```

Related Topics

show interface, on page 265
show wlan clients, on page 477
show wlan interfaces, on page 478

show wlan radius

Display information about the sessions with RADIUS servers being used for WLAN authentication (on vEdge routers only).

show wlan radius [**vap** *number*] [*tag*]

Syntax Description

tag	Tag Associated with a RADIUS Server: The tag can be from 4 through 16 characters long. You configure it with the **wlan interface vap** *number* **radius-servers** *tag* command.
vap *number*	VAP Interface Virtual access point instance. Range: 0 through 3

Command History

Release	Modification
17.1	Command introduced.

Example

Example 1

Display information about the RADIUS servers that are being used for WLAN authentication:

```
vEdge# show wlan radius
vap1 :
     Primary Server, Tag: tag_dummy1, IP: 10.20.24.15, VPN: 1
     Priority: 0, Source interface:
     Authentication information
        Server Port: 1812, Active: true, Round trip time: 0
        Access requests     :    0, retransmissions    :    0, challenges          : 0
        Access accepts      :    0, rejects            :    0, malformed responses : 0
        Bad authenticators  :    0, pending requests   :    0, timeouts            : 0
        Unknown types       :    0, packets dropped    :    0
     Accounting information
        Server Port:    0, Active: false, Round trip time: 0
        Requests            :    0, retransmissions    :    0, responses           : 0
        Bad authenticators  :    0, pending requests   :    0, timeouts            : 0
        Unknown types       :    0, packets dropped    :    0, malformed responses : 0

vap1 :
     Secondary Server, Tag: tag1, IP: 10.20.24.113, VPN: 1
     Priority: 0, Source interface:
     Authentication information
        Server Port: 1812, Active: false, Round trip time: 0
        Access requests     :    0, retransmissions    :    0, challenges          : 0
        Access accepts      :    0, rejects            :    0, malformed responses : 0
        Bad authenticators  :    0, pending requests   :    0, timeouts            : 0
        Unknown types       :    0, packets dropped    :    0
     Accounting information
        Server Port:    0, Active: false, Round trip time: 0
        Requests            :    0, retransmissions    :    0, responses           : 0
```

```
Bad authenticators  :    0, pending requests   :    0, timeouts           : 0
Unknown types       :    0, packets dropped    :    0, malformed responses : 0
```

Related Topics

clear wlan radius-stats, on page 63
show interface, on page 265
show wlan clients, on page 477
show wlan interfaces, on page 478
show wlan radios, on page 479

show ztp entries

Display a list of the vEdge router chassis numbers that are present in the ZTP table on the vBond orchestrator that is acting as a ZTP server.

show ztp entries

show ztp entries [*row-index*] (**chassis-number** *number* | **organization-name** *name* | **root-cert-path** *path* | **validity** (**valid** | **invalid**) | **vbond-ip** *ip-address* | **vbond-port** *number*)

Syntax Description

	None: List all entries in the ZTP table.
chassis-number *number* | **organization-name** *name* | **root-cert-path** *path* | **validity** (**valid** | **invalid**) | **vbond-ip** *ip-address* | **vbond-port** *number*	Chassis Information: List the entries corresponding to the specific chassis-related information.
row-index	Table Row: List the ZTP entry corresponding to the specified row number in the ZTP table.

Command History

Release	Modification
15.3	Command introduced.

Example

Example 1

```
vBond# request device add chassis-number 12345 serial-number 6789 validity valid vbond
10.1.14.1 org-name viptela
Adding Chassis number 12345 to the database
Successfully added the chassis-number

Creating Serial file ..
Uploading serial numbers via VPN 0
Copying ... /home/admin/vedge_serial_entries via VPN 0
Successfully loaded the vEdge serial numbers
```

```
vBond# show ztp entries
                                                                        ROOT
       CHASSIS  SERIAL                          VBOND  ORGANIZATION   CERT
INDEX  NUMBER   NUMBER  VALIDITY  VBOND IP     PORT   NAME           PATH
-------------------------------------------------------------------------------
1      12345    6789    valid     10.1.14.1    12345  viptela
```

Related Topics

request device, on page 107
request device-upload, on page 108

tcpdump

Print a description of the contents of control plane packets on a network interface that match a boolean expression. This command is the same as the UNIX **tcpdump** command.

tcpdump [**help**] [**interface** *interface-name*] [**options** " *unix-options* "] [**vpn** *vpn-id*]

Syntax Description

interface *interface-name*	Interface to Watch: Name of the interface on which to perform a TCP dump.
options " *unix-options* "	Options: One or more of the UNIX **tcpdump** command options, from among the following: [**–AbdDefhHIJKlLnNOpqStuUv**] [**–B** *size*] [**–c** *count*] [**–E** *algorithm:secret*] [**–j** *timestamp-type*] [**–M** *secret*] [**–T** *type*] [**–y** *data-link-type*] [*expression*] You must enclose *unix-options* in quotation marks. For an explanation of the options, see http://www.tcpdump.org/tcpdump_man.html.
vpn *vpn-id*	VPN to Watch: VPN identifier in which the interface is located.

For an explanation of the remaining standard UNIX options, see http://www.tcpdump.org/tcpdump_man.html.

Command History

Release	Modification
14.1	Command introduced.
16.3	Updated the command options.

Example

Example 1

```
vEdge# tcpdump vpn 1
tcpdump  in vpn 1
tcpdump: verbose output suppressed, use -v or -vv for full protocol decode
listening on ge0_0, link-type EN10MB (Ethernet), capture size 65535 bytes
19:29:49.765224 IP 10.2.2.11 > 224.0.0.5: OSPFv2, Hello, length 48
19:29:49.768263 IP 10.2.2.12 > 224.0.0.5: OSPFv2, Hello, length 48
```

```
^C
2 packets captured
2 packets received by filter
0 packets dropped by kernel

vEdge# tcpdump vpn 512 interface eth0 options "-v -n tcp port 22"
tcpdump -i eth0 -s 128 -v -n tcp port 22 in VPN 512
tcpdump: listening on eth0, link-type EN10MB (Ethernet), capture size 128 bytes
14:42:45.077442 IP (tos 0x10, ttl 64, id 50767, offset 0, flags [DF], proto TCP (6), length 184)
    10.0.1.33.22 > 10.0.1.1.53312: Flags [P.], seq 3975104349:3975104481, ack 1536172049, win 218, options [nop,nop,TS val
82477842 ecr 561859671], length 132
14:42:45.077571 IP (tos 0x10, ttl 64, id 8995, offset 0, flags [DF], proto TCP (6), length 52)
    10.0.1.1.53312 > 10.0.1.33.22: Flags [.], cksum 0x1648 (incorrect -> 0xe882), ack 132, win 372, options [nop,nop,TS val
561859682 ecr 82477842], length 0
14:42:45.121925 IP (tos 0x10, ttl 64, id 50768, offset 0, flags [DF], proto TCP (6), length 632)
...
```

test policy match control-policy

To determine the sequence number that matches a particular input variable and a policy name, use the **test policy match control-policy** command in privileged EXEC mode.

test policy match control-policy *policy name input variable*

Syntax Description

policy name	Name of a policy.

input variable

The following are the input variables used to search for policies:

- **carrier**: Identifier of the carrier type. It primarily indicates whether the transport is public or private.
- **color**: Identifier of the Transport Locator (TLOC) type.
- **color-list**: Name of the list of colors defined in policy lists.
- **community-list**: Name of the BGP community list defined in policy lists.
- **domain-id**: Domain identifier, or ID related to group of devices in the same domain and associated with a TLOC.
- **expanded-community-list**: Name of community list of Regex BGP community strings defined in policy lists.
- **group-id**: Specific group id of devices.
- **ipv4-prefix**: An IPv4 prefix.
- **ipv4-prefix-list**: Name of the list of IPv4 prefixes defined in policy lists.
- **ipv6-prefix**: An IPv6 prefix.
- **ipv6-prefix-list**: Name of the list of IPv6 prefixes defined in policy lists.
- **omp-tag**: OMP tag value associated with the TLOC route in the route table on the device.
- **origin**: Source of the route, either BGP, OSPF, connected, static.
- **originator**: System-ip address of the originating node.
- **preference**: OMP path-selection preference. A higher value is a more preferred path. Preference value for a route or prefix in the local site.
- **region**: Region ID defined in hierarchical SDWAN.
- **region-list**: Name of the region list ids defined in policy lists.
- **role**: Search by one of the hierarchical SDWAN roles.
- **site-id**: Individual site contributor or more overlay network site identifiers. A site can have multiple nodes or TLOCs.
- **site-list**: Name of the site list. Search by the name of list of site ids defined in policy lists.
- **tloc**: TLOC used as next hop for the vRoute. Search by individual TLOC address.
- **tloc-list**: Name of the list of tlocs defined in policy lists.
- **vpn**: VPN to which the vRoute belongs. Search by individual VPN ID.
- **vpn-list**: Name of the list of VPN IDs defined in policy lists.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.8.1a	This command was introduced.

Usage Guidelines

For the following, use the **test policy match control-policy** command:

- When there are one or more control policies that are configured on a Cisco SD-WAN Controller.
- When a policy is configured, to check if an entity is assigned correctly under a policy's sequence.
- To troubleshoot large policies with multiple sequence numbers. This command returns the sequence number of the policy that matches input.

Examples

The following sample output shows the sequence in control_policy1 for vpn 2:

```
Device# test policy match control-policy control_policy1 vpn 2
Found: vpn 2 matches policy control_policy1 sequence 111
    sequence: 111
        match route [VPN-ID  (0x100) ]
            vpn-id: 2
        action: reject
        set: [ (0x0) ]
```

The following sample output shows the sequence of the cp1 policy for prefix 10.1.1.1/32:

```
Device# test policy match control-policy cp1 prefix 10.1.1.1/32
Found: prefix 10.1.1.1/32 matches policy cp1 sequence 111
    sequence: 111
        match route [PFX-LIST  (0x10) ]
            IPv4 prefix-list: pf1 (0x7f04292bfa00)
        action: reject
        set: [ (0x0) ]
```

The following sample output shows the sequence of the cp1 policy for ipv6-prefix a:a:a:a:a:a:a:a/128:

```
Device# test policy match control-policy cp1 ipv6-prefix a:a:a:a:a:a:a:a/128
Found: ipv6-prefix a:a:a:a:a:a:a:a/128 matches policy cp1 sequence 600
    sequence: 600
        match route [PFX-LIST  (0x10) ]
            IPv6 prefix-list: pfv61 (0x7ff7be6cb080)
        action: reject
        set: [ (0x0) ]
```

Table 13: test policy match control-policy Field Descriptions

Field	Description
FOUND	Displays a statement informing about the policy's sequence with the search entity.
SEQUENCE	Displays the policy sequence added to the policy name.
VPN-ID	Displays the VPN ID of the policy match that is found.
ACTION	Displays the configured action for the given sequence in a policy.

Field	Description
SET	Displays the configured set actions when a route or a TLOC is accepted.

timestamp

Control the inclusion of timestamp information in command output and logging files.

timestamp (**disable** | **enable**)

Syntax Description

disable	Disable Timestamp Information: Disable the inclusion of timestamp information. This is the default.
enable	Enable Timestamp Information: Enable the inclusion of timestamp information.

Command History

Release	Modification
14.1	Command introduced.

Example

Example 1

```
vEdge# timestamp enable
vEdge# timestamp disable
Tue Feb  18 19:09:37.112 UTC
vEdge# timestamp enable
vEdge#
```

Related Topics

show clock, on page 218

tools ip-route

Display IP routes and the routing cache. This command is effectively the standard Linux **ip-route** command.

tools ip-route

Syntax Description

None

Command History

Release	Modification
16.1	Command introduced.

Example

Example 1

```
vEdge# tools ip-route
default via 10.0.5.13 dev eth1  proto zebra
10.0.1.0/24 dev eth0  proto kernel  scope link  src 10.0.1.19
10.0.5.0/24 dev eth1  proto kernel  scope link  src 10.0.5.19
172.16.255.11 via 127.0.1.254 dev tun_0_0  src 172.16.255.19
172.16.255.14 via 127.0.1.253 dev tun_1_0  src 172.16.255.19
172.16.255.15 via 127.0.1.254 dev tun_0_0  src 172.16.255.19
172.16.255.16 via 127.0.1.253 dev tun_1_0  src 172.16.255.19
172.16.255.20 via 127.0.1.254 dev tun_0_0  src 172.16.255.19
172.16.255.21 via 127.0.1.254 dev tun_0_0  src 172.16.255.19
```

Related Topics

show ip routes, on page 303

tools iperf

Run tests to display various parameters related to timing, buffers, and the TCP and UDP protocols for IPv4 and IPv6 (on vEdge routers only). This command is similar to the standard **iperf** command.

tools iperf [**options** *options*] [**vpn** *vpn-id*]

tools iperf help

Syntax Description

help	Command Help: Display all the command options.
options *options*	Command Options: See the Example Output below for a list of all the **tools iperf** command options.
vpn *vpn-id*	Specific VPN: Run the command in a specific VPN. Default: VPN 0

Command History

Release	Modification
17.1	Command introduced.

Example

Example 1

```
vEdge# tools iperf helpUSAGE:
 Options:
   help                     Show usage
   vpn                      VPN or namespace
   options                  iperf options

iperf --help in VPN 0
Usage: iperf [-s|-c host] [options]
       iperf [-h|--help] [-v|--version]

Client/Server:
  -f, --format    [kmKM]   format to report: Kbits, Mbits, KBytes, MBytes
  -i, --interval  #        seconds between periodic bandwidth reports
  -l, --len       #[KM]    length of buffer to read or write (default 8 KB)
  -m, --print_mss          print TCP maximum segment size (MTU - TCP/IP header)
  -o, --output    <filename> output the report or error message to this specified file
  -p, --port      #        server port to listen on/connect to
  -u, --udp                use UDP rather than TCP
  -w, --window    #[KM]    TCP window size (socket buffer size)
  -B, --bind      <host>   bind to <host>, an interface or multicast address
  -C, --compatibility      for use with older versions does not sent extra msgs
  -M, --mss       #        set TCP maximum segment size (MTU - 40 bytes)
  -N, --nodelay            set TCP no delay, disabling Nagle's Algorithm
  -V, --IPv6Version        Set the domain to IPv6

Server specific:
  -s, --server             run in server mode
  -U, --single_udp         run in single threaded UDP mode
  -D, --daemon             run the server as a daemon

Client specific:
  -b, --bandwidth #[KM]    for UDP, bandwidth to send at in bits/sec
                           (default 1 Mbit/sec, implies -u)
  -c, --client    <host>   run in client mode, connecting to <host>
  -d, --dualtest           Do a bidirectional test simultaneously
  -n, --num       #[KM]    number of bytes to transmit (instead of -t)
  -r, --tradeoff           Do a bidirectional test individually
  -t, --time      #        time in seconds to transmit for (default 10 secs)
  -F, --fileinput <name>   input the data to be transmitted from a file
  -I, --stdin              input the data to be transmitted from stdin
  -L, --listenport #       port to receive bidirectional tests back on
  -P, --parallel  #        number of parallel client threads to run
  -T, --ttl       #        time-to-live, for multicast (default 1)
  -Z, --linux-congestion <algo>  set TCP congestion control algorithm (Linux only)

Miscellaneous:
  -x, --reportexclude [CDMSV]   exclude C(connection) D(data) M(multicast) S(settings)
V(server) reports
  -y, --reportstyle C      report as a Comma-Separated Values
  -h, --help               print this message and quit
  -v, --version            print version information and quit

[KM] Indicates options that support a K or M suffix for kilo- or mega-

The TCP window size option can be set by the environment variable
TCP_WINDOW_SIZE. Most other options can be set by an environment variable
IPERF_<long option name>, such as IPERF_BANDWIDTH.

Report bugs to <iperf-users@lists.sourceforge.net>
```

Determine the data transfer rate and bandwidth available between two vEdge routers. Set up the client side:

```
Client-vEdge# tools iperf vpn 0 options -s
option_list, -s
arg list, -s
iperf -s in VPN 0
------------------------------------------------------------
Server listening on TCP port 5001
TCP window size: 85.3 KByte (default)
------------------------------------------------------------
```

Start the test on the server side:

```
Server-vEdge# tools iperf vpn 0 options "-c 172.16.255.13"
option_list, -c 172.16.255.13
arg list, -c 172.16.255.13
iperf -c 172.16.255.13 in VPN 0
------------------------------------------------------------
Client connecting to 172.16.255.13, TCP port 5001
TCP window size: 22.1 KByte (default)
------------------------------------------------------------
```

View the output on the server vEdge router:

```
[  4] local 10.0.12.26 port 54421 connected with 172.16.255.13 port 5001

[ ID] Interval       Transfer     Bandwidth
[  4]  0.0-10.0 sec   239 MBytes   200 Mbits/sec
Server-vEdge#
```

View the output and terminate the test on the client vEdge router:

```
[  5] local 172.16.255.13 port 5001 connected with 10.0.12.26 port 54421
[ ID] Interval       Transfer     Bandwidth
[  5]  0.0-10.1 sec   239 MBytes   200 Mbits/sec

^CClient-vEdge#
```

Related Topics

ping, on page 89
tools nping, on page 493
tools ss, on page 496

tools minicom

Connect to the serial console through USB ports (on vEdge 1000, vEdge 2000, and vEdge 5000 routers only). This command is effectively the standard Linux **minicom** command.

tools minicom options *options*

tools minicom help

Syntax Description

help	Command Help: Display all the command options.
options *options*	Command Options: See the Linux **minicom** man page for a list of all the **tools minicom** command options.

Command History

Release	Modification
17.1	Command introduced.

Example

Example 1

Access the serial console of a remote device through the USB port on a vEdge 1000 router:

1. Connect the USB port of a vEdge 1000 or vEdge 200 router to a console port, either on the router or another device.
2. Exit from the CLI to the router's shell:

   ```
   vEdge1000# vshell
   ```

3. Determine which USB port is connected:

   ```
   # ls -lrt /dev/tty*
   ```

4. Return to the CLI:

   ```
   # exit
   ```

5. Set the baud rate on the port:

   ```
   vEdge-1000# tools minicom "-b 115200 /dev/ttyUSB-port
   ```

6. Press Ctrl-a and z, set up the port with the minicom tool, and save the configuration.

Related Topics

console-baud-rate

tools netstat

Display information about network connections, routing tables, interface statistics, masquerading connections, and multicast memberships. This command is effectively the standard Linux **netstat** command.

tools netstat [**options** *options*] [**vpn** *vpn-id*]

tools netstat help

Syntax Description

help	Command Help: Display all the command options.
options *options*	Command Options: See the Example Output below for a list of all the **tools netstat** command options.
vpn *vpn-id*	Specific VPN: Run the command in a specific VPN. Default: VPN 0

Command History

Release	Modification
15.4.5	Command introduced.

Examples

Example 1

```
vEdge# tools netstat help
USAGE:
 Options:
   help                    Show usage
   vpn                     VPN or namspace
   options                 Netstat options

Netstat --help in VPN 0
usage: netstat [-vWeenNcCF] [<Af>] -r         netstat {-V|--version|-h|--help}
       netstat [-vWnNcaeol] [<Socket> ...]
       netstat { [-vWeenNac] -i | [-cWnNe] -M | -s }

        -r, --route              display routing table
        -i, --interfaces         display interface table
        -g, --groups             display multicast group memberships
        -s, --statistics         display networking statistics (like SNMP)
        -M, --masquerade         display masqueraded connections

        -v, --verbose            be verbose
        -W, --wide               don't truncate IP addresses
        -n, --numeric            don't resolve names
        --numeric-hosts          don't resolve host names
        --numeric-ports          don't resolve port names
        --numeric-users          don't resolve user names
        -N, --symbolic           resolve hardware names
        -e, --extend             display other/more information
        -p, --programs           display PID/Program name for sockets
        -c, --continuous         continuous listing

        -l, --listening          display listening server sockets
        -a, --all, --listening   display all sockets (default: connected)
        -o, --timers             display timers
        -F, --fib                display Forwarding Information Base (default)
        -C, --cache              display routing cache instead of FIB

  <Socket>={-t|--tcp} {-u|--udp} {-w|--raw} {-x|--unix} --ax25 --ipx --netrom
  <AF>=Use '-6|-4' or '-A <af>' or '--<af>'; default: inet
  List of possible address families (which support routing):
    inet (DARPA Internet) inet6 (IPv6) netrom (AMPR NET/ROM)
```

Example 2

```
vEdge# tools netstat vpn 512 options -anr
Netstat -anr in VPN 512
Kernel IP routing table
Destination     Gateway         Genmask         Flags   MSS Window  irtt Iface
10.0.99.0       0.0.0.0         255.255.255.0   U         0 0          0 mgmt0
127.1.0.0       0.0.0.0         255.255.255.0   U         0 0          0 loop0.2
vEdge# tools netstat options -anr
```

```
Netstat -anr in VPN 0
Kernel IP routing table
Destination     Gateway         Genmask         Flags   MSS Window  irtt Iface
10.0.100.0      0.0.0.0         255.255.255.0   U         0 0          0 ge1_7
127.1.0.0       0.0.0.0         255.255.255.0   U         0 0          0 loop0
127.1.1.0       0.0.0.0         255.255.255.0   U         0 0          0 loop1
```

Example 3

```
vEdge# tools netstat
Netstat  in VPN 0
Active Internet connections (w/o servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
tcp        0      0 localhost.localdo:39339 localhost.localdom:2424 TIME_WAIT
tcp        0      0 localhost.localdo:39173 localhost.localdom:2424 TIME_WAIT
tcp        0      0 localhost.localdoma:iax localhost.localdo:55613 TIME_WAIT
tcp        0      0 localhost.localdo:39100 localhost.localdom:2424 TIME_WAIT
tcp        0      0 localhost.localdo:39299 localhost.localdom:2424 TIME_WAIT
tcp        0      0 localhost.localdo:51278 localhost.localdom:9300 ESTABLISHED
tcp        0      0 localhost.localdo:60695 localhost.localdom:4565 ESTABLISHED
tcp        0      0 localhost.localdo:39133 localhost.localdom:2424 TIME_WAIT
tcp        0      0 localhost.localdo:50682 localhost.localdom:9300 ESTABLISHED
```

Related Topics

ping, on page 89
tools nping, on page 493
tools ss, on page 496

tools nping

Generate network packets, analyze responses, and measure response times. This command is effectively the standard Linux **nping** command.

nping generates network packets of different protocols. You can use the command as a simple ping utility to detect active hosts, and you can use it to generate raw packets to perform network stack stress tests, ARP poisoning, denial-of-service attacks, route tracing, among other things.

nping echo mode displays how generated probes change in transit so that you can track differences between transmitted and received packets.

Note The nping command expects the echo response packet to be received on the same interface as the echo request transmit interface. If it is not the same, nping treats it as a failure.

tools nping (*hostname* | *ip-address*) [**options** *options*] [**vpn** *vpn-id*]

tools nping help

Syntax Description

help	Command Help: Display all the command options.

options *options*	Command Options: See the Example Output below for a list of all the **tools nping** command options.
hostname | *ip-address*	Host To Check Connectivity To: Name or IP address of host to check connectivity to.
vpn *vpn-id*	Specific VPN: Run the command in a specific VPN. Default: VPN 0

Command History

Release	Modification
16.1	Command introduced.

Example

Example 1

```
vEdge# tools nping help

USAGE:
 Options:
   help                    Show usage
   vpn                     VPN or namspace
   options                 Nping options

Nping in VPN 0
Nping 0.6.47 ( http://nmap.org/nping )
Usage: nping [Probe mode] [Options] {target specification}

TARGET SPECIFICATION:
  Targets may be specified as hostnames, IP addresses, networks, etc.
  Ex: scanme.nmap.org, microsoft.com/24, 192.168.0.1; 10.0.*.1-24
PROBE MODES:
  --tcp-connect                   : Unprivileged TCP connect probe mode.
  --tcp                           : TCP probe mode.
  --udp                           : UDP probe mode.
  --icmp                          : ICMP probe mode.
  --arp                           : ARP/RARP probe mode.
  --tr, --traceroute              : Traceroute mode (can only be used with
                                    TCP/UDP/ICMP modes).
TCP CONNECT MODE:
   -p, --dest-port <port spec>    : Set destination port(s).
   -g, --source-port <portnumber> : Try to use a custom source port.
TCP PROBE MODE:
   -g, --source-port <portnumber> : Set source port.
   -p, --dest-port <port spec>    : Set destination port(s).
   --seq <seqnumber>              : Set sequence number.
   --flags <flag list>            : Set TCP flags (ACK,PSH,RST,SYN,FIN...)
   --ack <acknumber>              : Set ACK number.
   --win <size>                   : Set window size.
   --badsum                       : Use a random invalid checksum.
UDP PROBE MODE:
   -g, --source-port <portnumber> : Set source port.
   -p, --dest-port <port spec>    : Set destination port(s).
   --badsum                       : Use a random invalid checksum.
ICMP PROBE MODE:
```

```
  --icmp-type <type>               : ICMP type.
  --icmp-code <code>               : ICMP code.
  --icmp-id <id>                   : Set identifier.
  --icmp-seq <n>                   : Set sequence number.
  --icmp-redirect-addr <addr>      : Set redirect address.
  --icmp-param-pointer <pnt>       : Set parameter problem pointer.
  --icmp-advert-lifetime <time>    : Set router advertisement lifetime.
  --icmp-advert-entry <IP,pref>    : Add router advertisement entry.
  --icmp-orig-time  <timestamp>    : Set originate timestamp.
  --icmp-recv-time  <timestamp>    : Set receive timestamp.
  --icmp-trans-time <timestamp>    : Set transmit timestamp.
ARP/RARP PROBE MODE:
  --arp-type <type>                : Type: ARP, ARP-reply, RARP, RARP-reply.
  --arp-sender-mac <mac>           : Set sender MAC address.
  --arp-sender-ip  <addr>          : Set sender IP address.
  --arp-target-mac <mac>           : Set target MAC address.
  --arp-target-ip  <addr>          : Set target IP address.
IPv4 OPTIONS:
  -S, --source-ip                  : Set source IP address.
  --dest-ip <addr>                 : Set destination IP address (used as an
                                     alternative to {target specification} ).
  --tos <tos>                      : Set type of service field (8bits).
  --id  <id>                       : Set identification field (16 bits).
  --df                             : Set Don't Fragment flag.
  --mf                             : Set More Fragments flag.
  --ttl <hops>                     : Set time to live [0-255].
  --badsum-ip                      : Use a random invalid checksum.
  --ip-options <S|R [route]|L [route]|T|U ...> : Set IP options
  --ip-options <hex string>                    : Set IP options
  --mtu <size>                     : Set MTU. Packets get fragmented if MTU is
                                     small enough.
IPv6 OPTIONS:
  -6, --IPv6                       : Use IP version 6.
  --dest-ip                        : Set destination IP address (used as an
                                     alternative to {target specification}).
  --hop-limit                      : Set hop limit (same as IPv4 TTL).
  --traffic-class <class> :        : Set traffic class.
  --flow <label>                   : Set flow label.
ETHERNET OPTIONS:
  --dest-mac <mac>                 : Set destination mac address. (Disables
                                     ARP resolution)
  --source-mac <mac>               : Set source MAC address.
  --ether-type <type>              : Set EtherType value.
PAYLOAD OPTIONS:
  --data <hex string>              : Include a custom payload.
  --data-string <text>             : Include a custom ASCII text.
  --data-length <len>              : Include len random bytes as payload.
ECHO CLIENT/SERVER:
  --echo-client <passphrase>       : Run Nping in client mode.
  --echo-server <passphrase>       : Run Nping in server mode.
  --echo-port <port>               : Use custom <port> to listen or connect.
  --no-crypto                      : Disable encryption and authentication.
  --once                           : Stop the server after one connection.
  --safe-payloads                  : Erase application data in echoed packets.
TIMING AND PERFORMANCE:
  Options which take <time> are in seconds, or append 'ms' (milliseconds),
  's' (seconds), 'm' (minutes), or 'h' (hours) to the value (e.g. 30m, 0.25h).
  --delay <time>                   : Adjust delay between probes.
  --rate  <rate>                   : Send num packets per second.
MISC:
  -h, --help                       : Display help information.
  -V, --version                    : Display current version number.
  -c, --count <n>                  : Stop after <n> rounds.
  -e, --interface <name>           : Use supplied network interface.
```

```
  -H, --hide-sent                 : Do not display sent packets.
  -N, --no-capture                : Do not try to capture replies.
  --privileged                    : Assume user is fully privileged.
  --unprivileged                  : Assume user lacks raw socket privileges.
  --send-eth                      : Send packets at the raw Ethernet layer.
  --send-ip                       : Send packets using raw IP sockets.
  --bpf-filter <filter spec>      : Specify custom BPF filter.
OUTPUT:
  -v                              : Increment verbosity level by one.
  -v[level]                       : Set verbosity level. E.g: -v4
  -d                              : Increment debugging level by one.
  -d[level]                       : Set debugging level. E.g: -d3
  -q                              : Decrease verbosity level by one.
  -q[N]                           : Decrease verbosity level N times
  --quiet                         : Set verbosity and debug level to minimum.
  --debug                         : Set verbosity and debug to the max level.
EXAMPLES:
  nping scanme.nmap.org
  nping --tcp -p 80 --flags rst --ttl 2 192.168.1.1
  nping --icmp --icmp-type time --delay 500ms 192.168.254.254
  nping --echo-server "public" -e wlan0 -vvv
  nping --echo-client "public" echo.nmap.org --tcp -p1-1024 --flags ack

SEE THE MAN PAGE FOR MANY MORE OPTIONS, DESCRIPTIONS, AND EXAMPLES

vEdge# tools nping 10.1.15.15
Nping in VPN 0

Starting Nping 0.6.47 ( http://nmap.org/nping ) at 2016-04-02 19:41 PDT
SENT (0.0113s) ICMP [10.0.12.22 > 10.1.15.15 Echo request (type=8/code=0) id=62519 seq=1]
IP [ttl=64 id=9510 iplen=28 ]
RCVD (0.0120s) ICMP [10.1.15.15 > 10.0.12.22 Echo reply (type=0/code=0) id=62519 seq=1] IP
 [ttl=63 id=37514 iplen=28 ]
SENT (1.0114s) ICMP [10.0.12.22 > 10.1.15.15 Echo request (type=8/code=0) id=62519 seq=2]
IP [ttl=64 id=9510 iplen=28 ]
RCVD (1.0123s) ICMP [10.1.15.15 > 10.0.12.22 Echo reply (type=0/code=0) id=62519 seq=2] IP
 [ttl=63 id=38306 iplen=28 ]
vEdge#
```

Related Topics

ping, on page 89
tools netstat, on page 491
traceroute, on page 501

tools ss

Display socket statistics for a Cisco vEdge device. This command is effectively the standard Linux **ss** command. The output of the **tools ss** command is similar to the output of the **tools netstat** command, but more state and TCP information is displayed.

tools ss [**options** *options*] [**vpn** *vpn-id*]

tools ss help

Syntax Description

help	Command Help: Display all the command options.

options *options*	Command Options: See the Example Output below for a list of all the **tools netstat** command options.
vpn *vpn-id*	Specific VPN: Run the command in a specific VPN. Default: VPN 0

Command History

Release	Modification
16.2	Command introduced.

Examples

Example 1

```
vEdge# tools ss help
USAGE:
 Options:
   help                    Show usage
   vpn                     VPN or namespace
   options                 ss options

Netstat --help in VPN 0
usage: netstat [-vWeenNcCF] [<Af>] -r         netstat {-V|--version|-h|--help}
       netstat [-vWnNcaeol] [<Socket> ...]
       netstat { [-vWeenNac] -i | [-cWnNe] -M | -s }

        -r, --route              display routing table
        -i, --interfaces         display interface table
        -g, --groups             display multicast group memberships
        -s, --statistics         display networking statistics (like SNMP)
        -M, --masquerade         display masqueraded connections

        -v, --verbose            be verbose
        -W, --wide               don't truncate IP addresses
        -n, --numeric            don't resolve names
        --numeric-hosts          don't resolve host names
        --numeric-ports          don't resolve port names
        --numeric-users          don't resolve user names
        -N, --symbolic           resolve hardware names
        -e, --extend             display other/more information
        -p, --programs           display PID/Program name for sockets
        -c, --continuous         continuous listing

        -l, --listening          display listening server sockets
        -a, --all, --listening   display all sockets (default: connected)
        -o, --timers             display timers
        -F, --fib                display Forwarding Information Base (default)
        -C, --cache              display routing cache instead of FIB

  <Socket>={-t|--tcp} {-u|--udp} {-w|--raw} {-x|--unix} --ax25 --ipx --netrom
  <AF>=Use '-6|-4' or '-A <af>' or '--<af>'; default: inet
  List of possible address families (which support routing):
    inet (DARPA Internet) inet6 (IPv6) netrom (AMPR NET/ROM)
```

Example 2

```
vEdge# tools ss vpn 512
ss  in VPN 512
Netid  State      Recv-Q Send-Q   Local Address:Port       Peer Address:Port
u_dgr  ESTAB      0      0                    * 25172                 * 0
u_dgr  ESTAB      0      0                    * 33267                 * 0
u_dgr  ESTAB      0      0                    * 38346                 * 0
u_dgr  ESTAB      0      0                    * 44878                 * 0
u_dgr  ESTAB      0      0                    * 45056                 * 0
u_dgr  ESTAB      0      0                    * 443913                * 0
u_dgr  ESTAB      0      0                    * 443914                * 0
u_dgr  ESTAB      0      0                    * 444218                * 0
u_str  ESTAB      0      0                    * 25494                 * 0
u_str  ESTAB      0      0      /var/run/quagga/zebra_protobuf_monitor.api.512 25495                 * 0

u_str  ESTAB      0      0                    * 25831                 * 0
u_str  ESTAB      0      0      /var/run/quagga/zebra_protobuf_notify.api.512 26426                * 0
u_str  ESTAB      0      0                    * 27306                 * 0
u_str  ESTAB      0      0      /var/run/.ftmd.512 27310                 * 0
u_str  ESTAB      0      0                    * 33268                 * 0
u_str  ESTAB      0      0                    * 33269                 * 0
u_str  ESTAB      0      0                    * 38347                 * 0
u_str  ESTAB      0      0                    * 38348                 * 0
u_str  ESTAB      0      0                    * 44879                 * 0
u_str  ESTAB      0      0                    * 44880                 * 0
u_str  ESTAB      0      0                    * 45057                 * 0
u_str  ESTAB      0      0                    * 45058                 * 0
u_str  ESTAB      0      0                    * 443915                * 0
u_str  ESTAB      0      0                    * 443916                * 0
u_str  ESTAB      0      0                    * 443917                * 0
u_str  ESTAB      0      0                    * 443918                * 0
u_str  ESTAB      0      0                    * 444219                * 0
u_str  ESTAB      0      0                    * 444220                * 0
tcp    ESTAB      0      0          10.0.99.15:ssh          10.0.99.1:40694
tcp    ESTAB      0      0          10.0.99.15:ssh          10.0.99.1:53044
tcp    ESTAB      0      0          10.0.99.15:ssh          10.0.99.1:40287
tcp    ESTAB      0      0          10.0.99.15:ssh          10.0.99.1:39953
tcp    ESTAB      0      0          10.0.99.15:ssh          10.0.99.1:53051
tcp    ESTAB      0      0          10.0.99.15:ssh          10.0.99.1:53042
tcp    ESTAB      0      0          10.0.99.15:ssh          10.0.99.1:40707
```

Related Topics

tools netstat, on page 491

tools stun-client

Discover the local device's external IP address when that device is located behind a NAT device. This command obtains a port mapping for the device and optionally discovers properties about the Network Address Translator (NAT) between the local device and a server. This command is similar to a standard Linux **stun** , **stunc** , and **stun-client** commands.

Device discovery is done using the Session Traversal Utilities for NAT (STUN) protocol, which is defined in RFC 5389 .

tools stun-client [**options** *options*] **server** (*domain-name* | *ip-address*) [**port** *port-number*] [**vpn** *vpn-id*]

tools stun-client help

Syntax Description

help	Command Help: Display all the command options.
options *options*	Command Options: See the Example Output below for a list of all the **tools stun-client** command options.
server (*domain-name* | *ip-address*) [**port** *port-number*]	Remote STUN Server: Remote server to attach to, and port to use to reach the server. The default port number for UDP and TCP is 3478.
vpn *vpn-id*	Specific VPN: Run the command in a specific VPN. Default: VPN 0

Command History

Release	Modification
16.2	Command introduced.

Examples

Example 1

Perform a generic basic binding STUN test against Googles STUN server:

```
vEdge# tools stun-client vpn 0 options "--mode basic stun.l.google.com 19302"
stunclient --mode basic stun.l.google.com 19302 in VPN 0
Binding test: success
Local address: 50.247.64.109:56485
Mapped address: 50.247.64.109:56485
```

Example 2

Perform a full test to detect NAT type against Google's STUN server:

```
vEdge# tools stun-client vpn 0 options "--mode full stun.l.google.com 19302"
stunclient --mode full stun.l.google.com 19302 in VPN 0
Binding test: success
Local address: 50.247.64.109:33760
Mapped address: 50.247.64.109:33760
Behavior test: success
Nat behavior: Direct Mapping
Filtering test: success
Nat filtering: Endpoint Independent Filtering
```

Example 3

Perform a full NAT detection test using UDP source port 12346 (the default DTLS/IPsec port) against Google's STUN server:

```
vEdge# tools stun-client vpn 0 options "--mode full --localport 12346 stun.l.google.com
19302"
stunclient --mode full --localport 12346 stun.l.google.com 19302 in VPN 0
Binding test: success
```

```
Local address: 50.247.64.109:12346
Mapped address: 50.247.64.109:12346
Behavior test: success
Nat behavior: Direct Mapping
Filtering test: success
Nat filtering: Endpoint Independent Filtering
```

Example 4

Display help for the **tools stun-client** command:

```
vEdge# tools stun-client help
...
The following options are supported:
    --mode MODE
    --localaddr INTERFACE
    --localport PORTNUMBER
    --family IPVERSION
    --protocol PROTO
    --verbosity LOGLEVEL
    --help

--mode (basic | full)
"basic" mode is the default and indicates that the client should perform a STUN binding
test
only. "full" mode indicates that the client should attempt to diagnose NAT behavior and
filtering methodologies if the server supports this mode. The NAT filtering test is supported
only for UDP.

--localaddr INTERFACE or IPADDRESS
Name of an interface (such as "eth0") or one of the available IP addresses assigned to a
network interface present on the host. The interface chosen is the preferred address for
sending and receiving responses with the remote server. The default is to let the system
decide
which address to send on and to listen for responses on all addresses (INADDR_ANY).

--localport PORTNUM
PORTNUM is a value between 1 to 65535. It is the UDP or TCP port that the primary and
alternate interfaces listen on as the primary port for binding requests. If not specified,
 the
system randomly chooses an available port.

--family IPVERSION
IPVERSION is either "4" or "6" to specify the usage of IPv4 or IPv6. The default value is
"4".

--protocol (udp | tcp)
"udp" is the default.

--verbosity LOGLEVEL
Set the logging verbosity level. 0 is the default, for minimal output and logging). 1 shows
slightly more, and 2 and higher show even more.

EXAMPLES

stunclient stunserver.org 3478
    Perform a simple binding test request with the server, listening at "stunserver.org".

stunclient --mode full --localport 9999 12.34.56.78
    Perform a full set of UDP NAT behavior tests from local port 9999 to the server, listening

    at IP address 12.34.56.78 (port 3478).
```

```
stunclient --protocol tcp stun.selbie.com
    Performs a simple binding test using TCP to server, listening on the default port of
3478
    at stun.selbie.com.
```

traceroute

Display the path that packets take to reach a host or IP address on the network.

traceroute interface *interface-name* [**size** *bytes*] [**options** *options*] (*hostname* | *ip-address*)

traceroute vpn *vpn-id* [**interface** *interface-name*] [**size** *bytes*] [**options "** *options* **"**] (*hostname* | *ip-address*)

Syntax Description

interface *interface-name*	Interface: Interface through which traceroute probe should send packets.
(*hostname* | *ip-address*)	Network Host: Hostname or IPv4 or IPv6 address of a system on the network.
options " *options* **"**	Options: One or more options for the traceroute probe. *option* can be one or more of the following. Enclose the options in quotation marks (" "). • **–d**: Set the SO_DEBUG options to socket. • **–f** *first-ttl*: Report the traceroute probe results starting with the specified hop in the path. • **–g** *gateway*: Add an IP source route gateway to the outgoing packet. • **–I** (capital letter "i"): Use ICMP echo packets instead of UDP datagrams. • **–i** (lowercase letter "i") *interface-name*: Network interface from which to obtain the source IP address for outgoing traceroute probe packets. • **–m** *maximum-ttl*: Set the maximum time-to-live value, which is the maximum number of hops. • **–n**: Print numeric IP addresses. • **–p** *port*: Base UDP port number to use in traceroute probes. The default port is 33434. • **–q** *probes*: Number of probes to send per TTL. The default is 3. • **–r**: Bypass the normal route tables, and send the traceroute probe directly to a host. • **–s** *source-ip-address*: Source IP address to use in the probe packets. • **–t** *tos*: Type-of-service value to use in the probe packets. The default is 0. • **–v**: Display output in verbose mode. • **–w** *wait-time*: Time, in seconds, to wait for a response. The default is 3 seconds. • **–z** *pause-time*: Time, in milliseconds, to pause between probes. The default is 0 milliseconds.

size *bytes*	Probe Packet Size: Size of the traceroute probe packets, in bytes. The maximum packet size is 32,768 bytes.
vpn *vpn-id*	VPN: VPN in which the network host is located.

Command History

Release	Modification
14.1	Command introduced.
14.2	Added **interface**, **options**, **size**, and **vpn** options.
16.3	Added support for IPv6 host addresses.

Usage Guidelines

When a traceroute packet inside a service VPN arrives on the WAN interface:

- The Cisco vEdge device responds with a source IP of one of the interfaces in the service VPN.

Note For Cisco vEdge devices, the **traceroute** command does not support UDP.

- The Cisco IOS XE Catalyst SD-WAN device responds with a source IP of the WAN interface where the packet is received.

In both cases, the packets are always encapsulated in IPSec.

Examples

Example 1

```
vEdge-112# traceroute vpn 1 192.168.111.30
Traceroute in vpn 1
traceroute to 192.168.111.30 (192.168.111.30), 30 hops max, 46 byte packets
1  172.23.2.2 (172.23.2.2)  0.171 ms  0.196 ms  0.126 ms
2  100.100.100.11 (100.100.100.11)  0.128 ms  0.197 ms  0.127 ms
3  100.100.100.12 (100.100.100.12)  0.165 ms  0.194 ms  0.146 ms
4  172.23.111.2 (172.23.111.2)  0.218 ms  0.227 ms  0.214 ms
5  192.168.111.30 (192.168.111.30)  1.173 ms  0.824 ms  1.239 ms
```

Example 2

```
vEdge# traceroute host 10.2.3.12 size 1000 vpn 1 options "-q1 -w1 -m5"
Traceroute -q1 -w1 -m5 10.2.3.12 in VPN 1
traceroute to 10.2.3.12 (10.2.3.12), 5 hops max, 1000 byte packets
1 10.20.24.15 (10.20.24.15) 0.254 ms
2 10.0.5.21 (10.0.5.21) 1.318 ms
3 10.2.3.12 (10.2.3.12) 1.310 ms
```

Related Topics

ping, on page 89
show interface, on page 265

show ipv6 interface, on page 317
tools nping, on page 493

vshell

Exit from the Cisco SD-WAN CLI to the Linux shell running on the device. In the shell, the default terminal is xterm.

Use the UNIX **exit** command to return to the CLI. If the shell session is inactive, it times out after 15 minutes, and the device returns to the Cisco SD-WAN CLI.

Once you are in the shell, you can use standard Linux commands to perform standard operations, such as listing files, changing directories, and copying files off the device. To edit a file, use the **vi** editor.

vshell

Syntax Description

None

Command History

Release	Modification
14.1	Command introduced.
15.4	Idle session timeout added.
15.4.3	Having xterm be default terminal added

Example

Example 1

```
vEdge# show version
15.4.3
vEdge# vshell
vEdge$ echo $TERM
xterm
vEdge:~$ exit
exit
vEdge#
```

To open an SSH connection from a vManage NMS to an IOS XE router, you must specify the port number, which is 830:

```
vManage# vshell
vManage:~$ ssh 172.16.255.15 -p 830
admin@172.16.255.15's password:
```

Related Topics

exit, on page 79
quit, on page 94
request execute, on page 111