



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](#).

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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**

VPN	INGRESS		TOTAL DEST IP	TOTAL PKTS	TOTAL BYTES	SRC		DEST		IP		TCP		EGRESS INTF		
	SRC	IP				MIN	MAX	START	TIME TO	CNTRL	ICMP	BITS	OPCODE		NHOP	IP
	INTF	PKTS				LEN	LEN	TIME	EXP	DSCP	PROTO					
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 cflowd flows**

% No entries found.

vEdge#

Related Topics

[cflowd-template](#)

[clear app cflowd flows](#), on page 12

[show app cflowd flows](#), on page 166

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

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

Command History

Release	Modification
14.3	Command introduced.

Examples

vEdge# **show cflowd flows**

VPN	INGRESS		TOTAL DEST IP	TOTAL BYTES	SRC		DEST		IP DSCP	TIME TO EXPIRE	TCP		EGRESS INTF
	SRC IP	INTF			MIN PORT	MAX PORT	START TIME	PROTO			CNTRL BITS	ICMP OPCODE	
1	10.20.24.15	4294967295	172.16.255.15	78	49142	13322	0	6	2	0	0.0.0.0	4294967295	
1	10.20.24.15	4294967295	172.16.255.15	78	49143	13322	0	6	2	0	0.0.0.0	4294967295	
1	10.20.24.15	4294967295	172.16.255.15	78	49144	13322	0	6	2	0	0.0.0.0	4294967295	
1	10.20.24.15	4294967295	172.16.255.15	78	49145	13322	0	6	2	0	0.0.0.0	4294967295	
1	10.20.24.15	4294967295	172.16.255.15	78	49146	13322	0	6	2	0	0.0.0.0	4294967295	

```

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 cflowd flows
% No entries found.
vEdge#

```

Related Topics

[cflowd-template](#)

[clear app cflowd flow-all](#), on page 11

[show app cflowd flows](#), on page 166

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 168

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 170

[show app dpi flows](#), on page 171

[show app dpi supported-applications](#), on page 174

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 <i>prefix/length</i>	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 170
- [show app dpi flows](#), on page 171
- [show app dpi supported-applications](#), on page 174

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

Command History

Release	Modification
15.2	Command introduced.

Examples

```
vEdge# show app dpi flows
```

VPN	SRC IP	DST IP	Source Port	Dest 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 170

[show app dpi flows](#), on page 171

[show app dpi supported-applications](#), on page 174

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 180
- [show system statistics](#), on page 456

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-protocol 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			
TOTAL		SRC		TIME		EGRESS		INGRESS		TOTAL					
VPN	SRC IP	DEST IP	PORT	DEST	TO	PORT	DSCP	INTF	INTF	CNTRL	ICMP	POLICY	POLICY	POLICY	PKTS
BYTES	START	TIME	EXPIRE	NAME	NAME	NAME	NAME	NAME	NAME	NAME	OPCODE	NHOP	IP	DIRECTION	
0	10.0.5.11	10.1.15.15	12366	12346	48	17	0	0	0	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	0	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	0	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	0	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	0	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	0	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	0	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	0	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	0	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	0	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	0	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	0	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			
TOTAL		SRC		TIME		EGRESS		INGRESS		TOTAL					
VPN	SRC IP	DEST IP	PORT	DEST	TO	PORT	DSCP	INTF	INTF	CNTRL	ICMP	POLICY	POLICY	POLICY	PKTS
BYTES	START	TIME	EXPIRE	NAME	NAME	NAME	NAME	NAME	NAME	NAME	OPCODE	NHOP	IP	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 179

[show app log flows](#), on page 180

[show system statistics](#), on page 456

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 <i>interface-name</i>	Interface: Refresh the dynamic ARP cache entries associated with the specific interface.
<i>ip-address</i>	IP Address: Refresh the dynamic ARP cache entries for the specified IP address.
vpn <i>vpn-id</i>	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 187

[show ipv6 neighbor](#), on page 322

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 188[show bfd sessions](#), on page 189

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 194

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

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

soft (in out)	<p>Soft Reset:</p> <p>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.</p>
------------------------	--

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
      MSG   MSG   OUT
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 194

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
```

BRIDGE	INTERFACE	MAC ADDR	STATE	RX PKTS	RX OCTETS	TX PKTS	TX 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 202

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 201

[show bridge mac](#), on page 202

[show bridge table](#), on page 203

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 204
- [show cellular network](#), on page 205
- [show cellular profiles](#), on page 207
- [show cellular radio](#), on page 208
- [show cellular sessions](#), on page 209
- [show cellular status](#), on page 210
- [show interface](#), on page 267

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      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 204
- [show cellular network](#), on page 205
- [show cellular profiles](#), on page 207
- [show cellular radio](#), on page 208
- [show cellular sessions](#), on page 209
- [show cellular status](#), on page 210
- [show interface](#), on page 267

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.
<i>application</i>	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

```

VPN	APPLICATION	EXIT TYPE	GATEWAY SYSTEM 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 223

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      SITE      DOMAIN      PEER      PEER      PEER
TYPE      PROTOCOL  SYSTEM IP  ID         ID          PRIVATE  PRIVATE  PUBLIC
          SYSTEM   IP       ID         ID          IP       PORT     PUBLIC IP
          IP      IP      IP      IP      IP      IP      IP
-----
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      SITE      DOMAIN      PEER      PEER      PEER
TYPE      PROTOCOL  SYSTEM IP  ID         ID          PRIVATE  PRIVATE  PUBLIC
          SYSTEM   IP      ID         ID          IP       PORT     PUBLIC IP
          IP      IP      IP      IP      IP      IP      IP
-----
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 229

[show omp peers](#), on page 350

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

```

CTORGNMIS - Certificate Org name mismatch.
DCONFALL - DTLS connection failure.
DEVALC - Device memory Alloc failures.
DHSTMO - DTLS HandShake Timeout.
DISCVBD - Disconnect vBond after register reply.
DISTLOC - TLOC Disabled.
DUPSER - Duplicate Serial Number.
DUPCLHELO - Recd a Dup Client Hello, Reset GI Peer.
HAFAIL - SSL Handshake failure.
IP_TOS - Socket Options failure.
LISFD - Listener Socket FD Error.
MGRTELCCKD - Migration blocked. Wait for local TMO.
MEMALCFL - Memory Allocation Failure.
NOACTVB - No Active vBond found to connect.
NOERR - No Error.
NOSLPRCRT - Unable to get peer's certificate.

SERNTPRES - Serial Number not present.
SYSIPCHNG - System-IP changed.
TMRALC - Memory Failure.
TUNALC - Memory Failure.
TXCHTOBD - Failed to send challenge to BoardID.
UNMSGDBG - Unknown Message type or Bad Register msg.
UNAUTHHEL - Recd Hello from Unauthenticated peer.
VBDEST - vDaemon process terminated.
VECRTREV - vEdge Certification revoked.
VSCRTREV - vSmart Certificate revoked.
VB_TMO - Peer vBond Timed out.

VM_TMO - Peer vManage Timed out.
VP_TMO - Peer vEdge Timed out.
VS_TMO - Peer vSmart Timed out.
XTVSTRDN - Extra vSmart tear down.

```

```

PEER PEER PEER SITE DOMAIN PEER PEER PEER PEER
TYPE PROTOCOL SYSTEM IP ID ID PRIVATE PRIVATE PUBLIC LOCAL COLOR STATE LOCAL REMOTE REPEAT
-----
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 DCONFALL 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 229
- [show control connections-history](#), on page 232
- [show orchestrator connections-history](#), on page 372

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.
<i>number</i>	Specific Core File: Clear the specific core file. <i>number</i> 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 80

[file show](#), on page 80

[show crash](#), on page 243

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 <i>interface-name</i>	Interface to DHCP Server: Interface to use to reach the DHCP server.
--	--

client-mac <i>client-mac</i>	MAC Address of DHCP Server: Clear the entry for a single DHCP host based on the host's MAC address.
vpn <i>vpn-id</i>	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 246
- [show dhcp server](#), on page 247

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 <i>interface-name</i>	Clear the DHCP state of a specific interface.
vpn <i>vpn-id</i>	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 246

[show dhcp server](#), on page 247

[show ipv6 dhcp interface](#), on page 317

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 faal23ce-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

INDEX  INTERFACE  PUBLIC  PUBLIC  PRIVATE  PRIVATE  VSMARTS  VMANAGES  COLOR  CARRIER  ADMIN  OPERATION  LAST
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 faal23ce-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
```

INDEX	INTERFACE	PUBLIC IP	PUBLIC PORT	PRIVATE IP	PRIVATE PORT	VSMARTS	VMANAGES	COLOR	CARRIER	ADMIN STATE	OPERATION STATE	LAST 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 faal23ce-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
```

INDEX	INTERFACE	PUBLIC IP	PUBLIC PORT	PRIVATE IP	PRIVATE PORT	VSMARTS	VMANAGES	COLOR	CARRIER	ADMIN STATE	OPERATION STATE	LAST 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 235

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

<i>mac-address</i>	Client MAC Address: MAC address of the client to deauthenticate. To determine a client's MAC address, use the show dot1x clients command.
interface <i>interface-name</i>	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 248
- [show dot1x interfaces](#), on page 249
- [show dot1x radius](#), on page 250

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 82
- [show history](#), on page 262

clear igmp interface

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

Syntax Description

<i>interface-name</i>	Interface Name: Name of the interface to clear. <i>interface-name</i> has the format geslot/port .
vpn <i>vpn-id</i>	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 264

clear igmp protocol

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

clear igmp interface **vpn** *vpn-id*

Syntax Description

vpn <i>vpn-id</i>	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 263

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 <i>vpn-id</i>	VPN: Clear IGMP statistics in a specific VPN.

Command History

Release	Modification
14.3	Command introduced.

Examples

```
vEdge# show igmp statistics
```

```

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

```

```
vEdge# clear igmp statistics
```

```
vEdge# show igmp statistics
```

```

      RX      RX
      GENERAL  GROUP  RX V1  RX V2  RX   RX   RX   TX   TX
VPN  QUERY   QUERY  REPORT REPORT LEAVE UNKNOWN ERROR GENERAL GROUP TX
-----
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 265

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
```

INDEX	PUBLIC IP	PUBLIC PORT	PRIVATE IP	PRIVATE PORT	VSMARTS	COLOR	CARRIER	ADMIN STATE	OPERATION 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
```

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

Related Topics

- [reboot](#), on page 95
- [request certificate](#), on page 101
- [request csr upload](#), on page 106
- [request root-cert-chain](#), on page 141
- [request vsmart-upload serial-file](#), on page 157
- [show control local-properties](#), on page 235

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 <i>queue-number</i>	Interface Queue: Zero the statistics on the specified queue.
interface <i>interface-name</i>	Specific Interface: Zero the statistics on the specified interface.
vpn <i>vpn-id</i>	VPN: Zero the interface statistics for interfaces in a specific VPN.

Command History

Release	Modification
14.1	Command introduced.

Examples

vEdge# **show interface statistics**

VPN	INTERFACE	RX PACKETS	RX OCTETS	RX ERRORS	RX DROPS	TX PACKETS	TX OCTETS	TX ERRORS	TX DROPS	RX PPS	RX KBPS	TX PPS	TX 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**

VPN	INTERFACE	RX PACKETS	RX OCTETS	RX ERRORS	RX DROPS	TX PACKETS	TX OCTETS	TX ERRORS	TX DROPS	RX PPS	RX KBPS	TX PPS	TX 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	0

Related Topics[show interface](#), on page 267[show interface statistics](#), on page 292

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 <i>group-address</i> source <i>source-address</i> vpn <i>vpn-id</i>	Clear Statistics from the MFIB: Clear the statistics for a particular group, source, or VPN from the MFIB.
upstream-iif <i>interface-name</i>	Upstream Interface: Clear the MFIB statistics for the specified upstream interface.
upstream-tunnel <i>ip-address</i>	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 301

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 300

clear ip nat filter

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

clear ip nat filter [*parameter*]

Syntax Description

<i>parameter</i>	Filter Parameter: Clear NAT translation filters associated with the specified parameter. <i>parameter</i> 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
OUTBOUND INBOUND INBOUND
VPN IFNAME VPN PROTOCOL SOURCE DEST SOURCE DEST SOURCE DEST SOURCE DEST FILTER IDLE OUTBOUND
OCTETS PACKETS OCTETS ADDRESS ADDRESS PORT PORT ADDRESS ADDRESS PORT PORT STATE TIMEOUT PACKETS
-----
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
OUTBOUND INBOUND INBOUND
VPN IFNAME VPN PROTOCOL SOURCE DEST SOURCE DEST SOURCE DEST SOURCE DEST FILTER IDLE OUTBOUND
OCTETS PACKETS OCTETS ADDRESS ADDRESS PORT PORT ADDRESS ADDRESS PORT PORT STATE TIMEOUT PACKETS
-----
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 302

clear ip nat statistics

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

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

clear ipv6 dhcp state

Syntax Description

interface <i>interface-name</i> vpn <i>vpn-id</i>	Specific Interface: Clear NAT translation statistics associated with the specified interface.
vpn <i>vpn-id</i>	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      NAT      NAT      NAT      NAT      NAT      NAT      OUTBOUND  INBOUND  INBOUND
      OUTBOUND INBOUND ENCODE  DECODE  MAP      FILTER  FILTER  STATE  POLICER  ICMP     ICMP     ICMP
VPN  IFNAME  PACKETS  PACKETS  FAIL    FAIL    FAIL    FAIL    FAIL    FAIL    DROPS    ERROR    ERROR    DROPS    NAT      NAT
-----
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      NAT      NAT      NAT      NAT      NAT      NAT      OUTBOUND  INBOUND  INBOUND
      OUTBOUND INBOUND ENCODE  DECODE  MAP      FILTER  FILTER  STATE  POLICER  ICMP     ICMP     ICMP
VPN  IFNAME  PACKETS  PACKETS  FAIL    FAIL    FAIL    FAIL    FAIL    FAIL    DROPS    ERROR    ERROR    DROPS    NAT      NAT
-----
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 304

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 <i>interface-name</i>	Interface: Clear the DHCP state of a specific interface.
vpn <i>vpn-id</i>	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 246
- [show dhcp server](#), on page 247
- [show ipv6 dhcp interface](#), on page 317

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 <i>interface-name</i>	Interface: Refresh the dynamic ARP cache entries associated with the specific interface.
<i>ip-address</i>	IP Address: Refresh the dynamic ARP cache entries for the specified IP address.
vpn <i>vpn-id</i>	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
```

VPN	IF 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 187
- [show ipv6 neighbor](#), on page 322

clear ipv6 policy

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

```
clear policy access-list name acl-name
```

Syntax Description

name <i>acl-name</i>	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 323
- [show ipv6 policy access-list-names](#), on page 324

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 350

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.

clear omp peer

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
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 FAMILY	VPN	PREFIX	FROM PEER	PATH 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	-
	1	172.16.255.117/32	172.16.255.19	46	16355	C,R	172.16.255.21	lte	ipsec	-
			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
```

PEER	TYPE	DOMAIN ID	SITE 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 FAMILY	VPN	PREFIX	FROM PEER	PATH 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	-
			172.16.255.20	44	16355	C,I,R	172.16.255.21	lte	ipsec	-
	1	10.2.3.0/24	172.16.255.20	20	34885	C,I,R	172.16.255.15	lte	ipsec	-
			172.16.255.20	17	61944	C,I,R	172.16.255.16	lte	ipsec	-
	1	10.20.24.0/24	172.16.255.20	19	34885	C,I,R	172.16.255.15	lte	ipsec	-
			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 350

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 354

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 364

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    UNAUTHHEL - Recd hello from unauthenticated peer
DISTLOC - TLOC disabled                          VBEDEST - vDaemon process terminated
DUPSER - Duplicate serial number                 VECDREV - 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	SITE	DOMAIN	PEER	PEER	PEER	PEER	PEER	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 229
- [show orchestrator connections-history](#), on page 372
- [show orchestrator local-properties](#), on page 375
- [show orchestrator statistics](#), on page 377

clear ospf all

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

clear ospf all *vpn vpn-id*

Syntax Description

vpn <i>vpn-id</i>	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

```

VPN	ADDRESS	IF INDEX	IF NAME	NEIGHBOR ID	STATE	PRI	DEAD 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 387

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 <i>vpn-id</i>	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 382

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

<i>interface-name</i> vpn <i>vpn-id</i>	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 337
- [show multicast rpf](#), on page 339
- [show multicast topology](#), on page 340
- [show multicast tunnel](#), on page 341
- [show omp multicast-routes](#), on page 349
- [show pim interface](#), on page 396
- [show pim neighbor](#), on page 397
- [show pim rp-mapping](#), on page 398
- [show pim statistics](#), on page 399

clear pim neighbor

Clear a PIM neighbor (on vEdge routers only).

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

Syntax Description

<i>ip-address</i> vpn <i>vpn-id</i>	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 337
- [show multicast rpf](#), on page 339
- [show multicast topology](#), on page 340
- [show multicast tunnel](#), on page 341
- [show omp multicast-routes](#), on page 349
- [show pim interface](#), on page 396
- [show pim neighbor](#), on page 397
- [show pim rp-mapping](#), on page 398
- [show pim statistics](#), on page 399

clear pim protocol

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

clear pim protocol vpn *vpn-id*

Syntax Description

vpn <i>vpn-id</i>	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 337
- [show multicast rpf](#), on page 339
- [show multicast topology](#), on page 340
- [show multicast tunnel](#), on page 341

[show omp multicast-routes](#), on page 349
[show pim interface](#), on page 396
[show pim neighbor](#), on page 397
[show pim rp-mapping](#), on page 398
[show pim statistics](#), on page 399

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 <i>vpn-id</i>	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 337
[show multicast rpf](#), on page 339
[show multicast topology](#), on page 340
[show multicast tunnel](#), on page 341
[show omp multicast-routes](#), on page 349
[show pim interface](#), on page 396
[show pim neighbor](#), on page 397

[show pim rp-mapping](#), on page 398

[show pim statistics](#), on page 399

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 <i>vpn-id</i>	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 337
[show multicast rpf](#), on page 339
[show multicast topology](#), on page 340
[show multicast tunnel](#), on page 341
[show omp multicast-routes](#), on page 349
[show pim interface](#), on page 396
[show pim neighbor](#), on page 397
[show pim rp-mapping](#), on page 398
[show pim statistics](#), on page 399

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
NAME          INDEX  DIRECTION  RATE          BURST  OOS  OOS
              ACTION PKTS
-----
ge0_0_11q    10    out        200000000000  15000  drop  2499
ge0_3_11q    11    out        200000000000  15000  drop  3212

vEdge# clear policer statistics
vEdge# show policer
NAME          INDEX  DIRECTION  RATE          BURST  OOS  OOS
              ACTION PKTS
-----
ge0_0_11q    10    out        200000000000  15000  drop  0
ge0_3_11q    11    out        200000000000  15000  drop  0
  
```

Related Topics

[show policer](#), on page 403
[show policy data-policy-filter](#), on page 408
[show policy from-vsmart](#), on page 411

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 <i>acl-name</i>	Access List Counters: Zero the counters associated with the specified access list.
app-route-policy <i>policy-name</i>	Application-Aware Routing Policy Counter: Zero the counters associated with the specified application-aware routing policy.
data-policy <i>policy-name</i>	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-statistics
vEdge#
```

Related Topics

[show policy zbfw filter-statistics](#), on page 417

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 417

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 <i>pair-name</i>	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 FILTER	SOURCE VPN	SOURCE IP ADDRESS	DESTINATION IP ADDRESS	SOURCE PORT	DESTINATION PORT	PROTOCOL	SOURCE VPN	DESTINATION VPN	IDLE TIMEOUT	OUTBOUND PACKETS	OUTBOUND OCTETS	INBOUND PACKETS	INBOUND OCTETS	STATE
zpl established	1	10.20.24.17	10.20.25.18	44061	5001	TCP	1	1	0:00:59:59	12552	17581337	6853	463590	
zpl established	1	10.20.24.17	10.20.25.18	44062	5001	TCP	1	1	0:01:00:00	10151	14217536	5561	375290	
zpl established	1	10.20.24.17	10.20.25.18	44063	5001	TCP	1	1	0:00:59:59	7996	11198381	4262	285596	
zpl established	1	10.20.24.17	10.20.25.18	44064	5001	TCP	1	1	0:00:59:59	7066	9895451	3826	257392	
zpl established	1	10.20.24.17	10.20.25.18	44065	5001	TCP	1	1	0:00:59:59	13471	18868856	7440	504408	
zpl established	1	10.20.24.17	10.20.25.18	44066	5001	TCP	1	1	0:00:59:59	8450	11834435	4435	295718	

```
vEdge# clear policy zbfw sessions
```

```
vEdge# show policy zbfw sessions
```

ZONE PAIR FILTER	SOURCE VPN	SOURCE IP ADDRESS	DESTINATION IP ADDRESS	SOURCE PORT	DESTINATION PORT	PROTOCOL	SOURCE VPN	DESTINATION VPN	IDLE TIMEOUT	OUTBOUND PACKETS	OUTBOUND OCTETS	INBOUND PACKETS	INBOUND OCTETS	STATE
zpl established	1	10.20.24.17	10.20.25.18	44061	5001	TCP	1	1	0:00:59:59	0	0	0	0	
zpl established	1	10.20.24.17	10.20.25.18	44062	5001	TCP	1	1	0:01:00:00	0	0	0	0	
zpl established	1	10.20.24.17	10.20.25.18	44063	5001	TCP	1	1	0:00:59:59	0	0	0	0	
zpl established	1	10.20.24.17	10.20.25.18	44064	5001	TCP	1	1	0:00:59:59	0	0	0	0	
zpl established	1	10.20.24.17	10.20.25.18	44065	5001	TCP	1	1	0:00:59:59	0	0	0	0	
zpl established	1	10.20.24.17	10.20.25.18	44066	5001	TCP	1	1	0:00:59:59	0	0	0	0	

Related Topics

[show policy zbfw sessions](#), on page 421

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 422

[show pppoe session](#), on page 423

[show pppoe statistics](#), on page 423

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 212

[show control connections](#), on page 229

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 456

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 474

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 <i>number</i>	VAP Interface: Virtual access point instance. Range: 0 through 3.
-----------------------------	--

Command History

Release	Modification
17.1	Command introduced.

Related Topics

- [show interface](#), on page 267
- [show wlan clients](#), on page 479
- [show wlan interfaces](#), on page 480
- [show wlan radios](#), on page 481
- [show wlan radius](#), on page 483

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

<i>ccyy-mm-dd</i>	Date: Set the date by specifying four-digit year, two-digit month, and two-digit day. The year can be from 2000 to 2060.
<i>hh:mm:ss.sss</i>	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 476

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 <i>id</i>	Token to Identify the Pending Commit Operation: If you specified a token, <i>id</i> , 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 224

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 219

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 80
[load](#)

controller-mode

To switch from autonomous mode to controller and from controller mode to autonomous mode use the controller-mode command in Privileged EXEC mode.

controller-mode { **enable** | **disable** }

Syntax Description

enable	Enables controller mode.
disable	Disables controller mode.

Command Default

The device exists in the day 0 configuration mode.

Command Modes Privileged EXEC #

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

Usage Guidelines

When you switch the device mode from autonomous to controller, the startup configuration and the information in NVRAM (certificates), are erased. This action is same as the **write erase**. If you switch back to autonomous mode, the IOS XE configuration is not restored because the startup configuration is empty. You have to manually restore configuration from the backup..

When you switch the device mode from controller to autonomous, all Yang-based configuration is preserved and can be reused if you switch back to controller mode. If you switch back to controller mode, the original configuration in controller mode is preserved.

If the mode change CLI is invoked from a Telnet terminal, the mode change operation is not permitted unless auto-boot variables are set in ROMmon.

Example

Use the **controller-mode disable** command the device to autonomous mode.

```
Device# controller-mode disable
```

Use the **controller-mode enable** command switches the device to Controller mode.

```
Device# controller-mode enable
```

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 <i>vpn-id</i>	<p>BGP: Control debugging for BGP:</p> <ul style="list-style-type: none"> • 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 <i>vpn-id</i>—Specify the VPN in which to perform debugging.

<p>[no] debug cflowd (cli events ipc misc pkt_tx) [level (high low)]</p>	<p>Cflowd Traffic Flow Monitoring: Control debugging for cflowd:</p> <ul style="list-style-type: none"> • 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.
<p>[no] debug chmgr all</p>	<p>Chassis Manager: Control debugging for the chassis manager.</p>
<p>[no] debug cloudexpress (events ftm omp rtm ttm) [level (high low)]</p>	<p>Cloud OnRamp for SaaS: Control debugging for Cloud OnRamp for SaaS (formerly CloudExpress service).</p> <ul style="list-style-type: none"> • 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.

<p>[no] debug config-mgr (events pppoe ra) [level (high low)]</p>	<p>Configuration Manager: Control debugging for the configuration manager.</p> <ul style="list-style-type: none"> • 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.
<p>[no]debug dbgd events</p>	<p>Debugger Process: Control debugging for the debugger process itself.</p> <ul style="list-style-type: none"> • events—Control the debugging of events to which the debugger process (daemon) responds.
<p>[no] debug dhcp-client (all events packets)</p>	<p>DHCP Client: Control the debugging of Dynamic Host Configuration Protocol (DHCP) client activities.</p> <ul style="list-style-type: none"> • 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.
<p>[no] debug dhcp-helper (all events packets)</p>	<p>DHCP Helper: Control the debugging of Dynamic Host Configuration Protocol (DHCP) helper activities.</p> <ul style="list-style-type: none"> • 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.

<p>[no] debug fpm (all config dpi policy ttm)</p>	<p>Forwarding Policy Manager: Control debugging for the forwarding policy manager:</p> <ul style="list-style-type: none"> • 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.
<p>[no] debug ftm all</p>	<p>Forwarding Table Manager: Control debugging for the forwarding table manager operations.</p>
<p>[no] debug igmp (config events fsm ipc packets) [level (high low)]</p>	<p>IGMP: Control debugging for IGMP.</p> <ul style="list-style-type: none"> • 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.
<p>[no] debug ike (all confd error events misc) [level (high low)]</p>	<p>IKE: Control debugging for the forwarding policy manager.</p> <ul style="list-style-type: none"> • 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	<p>Netconf: Enable and disable Netconf activity to log all Netconf configuration messages between the local device and the vManage NMS.</p> <p>Netconf debug messages are logged to the /var/log/confd/netconf.trace file.</p>
[no] debug omp (all events ipcs packets)	<p>OMP: Control the debugging of OMP.</p> <ul style="list-style-type: none"> • 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	<p>OSPF: Control the debugging of OSPF.</p> <ul style="list-style-type: none"> • 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 state 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	<p>PIM: Control debugging for PIM.</p> <ul style="list-style-type: none"> • 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	<p>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.</p>

<p>[no] debug resolver events [level (high low)]</p>	<p>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.</p> <ul style="list-style-type: none"> • 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.
<p>[no] debug rtm (events ipc next-hop packets rib) vpn vpn-id</p>	<p>Route Table Manager: Control debugging for the route table manager.</p> <ul style="list-style-type: none"> • 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.
<p>[no] debug snmp events [level (high low)]</p>	<p>SNMP: Control debugging for all SNMP events.</p> <ul style="list-style-type: none"> • 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.
<p>[no] debug sysmgr all</p>	<p>System Manager: Control debugging for the system manager.</p>
<p>[no] debug tcpd [level (high low)]</p>	<p>TCP Optimization Process: Control debugging for TCP optimization.</p> <ul style="list-style-type: none"> • 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.
<p>[no] debug transport events [level (high low)]</p>	<p>Transport Process: Control debugging for all vtracker transport process events. The vtracker process pings the vBond orchestrator every second.</p> <ul style="list-style-type: none"> • 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). <ul style="list-style-type: none"> • 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 inner 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} vDaemon Process: Control debugging for vDaemon, the Cisco SD-WAN software process:

{high | low}

- **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.
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* Specifies 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 }	<p>Facility: Control debugging of miscellaneous vdaemon actions:</p> <ul style="list-style-type: none"> • 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 95
- [vshell](#), on page 505

file list

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

file list *directory*

Syntax Description

<i>directory</i>	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

<i>filename</i>	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-----
MIIDOzCCAiMCAQAwwboxCzAJBgNVBAYTA1VTMRMwEQYDVQKIExwDyWxpZm9ybmlh
MREwDwYDVQQHEwhTYW4gSm9zZTEOMAwGA1UECxFMYXZpdmExFDASBgNVBAoTC3ZJ
UHRlbGEGSW5jMTkwNwYDVQQDFDBWU21hcnRfMDdfMDFfMjAxNF8yM18yM181M180
Mdc2MzglNzcudmlwdGVsYS5jb20xIjAgBgkqhkiG9w0BCQEW3N1cHBvcnRAadm1w
dGVsYS5jb20wggEiMA0GCSqGSIb3DQEBAQUAA4IBDwAwggEKAoIBAQC2ebu1o5FJ
419xtFhQOf0E70jDzRvDvC9IUcOPayMMnJgN54EXi3ReVNjsQCn3+P8nPa9hQFjD
3wI03vMVqw4DCVsNmV/1hVsK0PpiV2ALThu4sWtLUPhOJcBOjW8sRcgYP6FKeWaH
Bolx4e+V5vIP52pbTzyIIF/ISdQqKaoMTDcugvKUKrP/xTKpQvvNrOz7eyJUbc8B
IrHyAirm32gFZc8kPeOM6QZTRtVWn4u0cjU9i/DYzByu5HpJqRucrFG5YiM/Ev9p
f8nalbT1Nrmh7RTkTyE276g+nLl8IyTIIrQlbG58bxX0x2inoJPl2zV828Fm2AuA
KEEKXzN/bBTfAgMBAAGgOzA5BgkqhkiG9w0BCQ4xLDAqMAkGA1UdEwQCMAAHQYD
VR0OBBYEFNcvAamf8WANRkKbFjBo3Hwi83BxMA0GCSqGSIb3DQEBBQUAA4IBAQA9
/0fCrER0i10JSqjeOVUppILAmApkWbUaEegdR2s8wzCJDnrV8P6ZPpu98xv3Lb1Y
9tiI8ShZPGHPU0ypnLnvGvzhMUmOaL5VRQeXSwvRSvaxN2fBaFKHXclTZbCIF/p8
fPasc7n84/uOsQU/+PaIFwFDUv4GKMiPNLT5HKpHIQM1j4PwYcNgKL+gU6lfely2
Wi80ZrwwqYRZ5jxVZSTc6qnEA6i1DvxgdDirF5o5Hgt8pHB5JwCBBNrT+/jiBiYt
rjN2VSOzx5WiIDvdfZcf08ajXItvhcuuNxBTQEHTfd7p8G1fDGKdtrKybvXkxv/
fVZLIzN2tDkqsdBZMT9+
-----END CERTIFICATE REQUEST-----
```

Related Topics

[file list](#), on page 80

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 395

history

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

show history *number*

Syntax Description

show history <i>number</i>	Number of History Items: Set the number of commands tracked by the CLI history. <i>number</i> 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 262

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 <i>seconds</i>	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 219

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

<i>job-number</i>	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 86
- [monitor stop](#), on page 86
- [show jobs](#), on page 327

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 <i>session-number</i>	Specific Session: Terminate a specific CLI session.
user <i>username</i>	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	Parameter	Description
	<i>sdwan</i>	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 reenables 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

<i>filename</i>	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 327

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

<i>filename</i>	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 86
- [show jobs](#), on page 327

nslookup

Perform a DNS lookup.

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

Syntax Description

<i>dns-name</i>	DNS Name: Perform a DNS lookup to map a fully qualified domain name to one or more IP addresses. <i>dns-name</i> can be a hostname string, or an IPv4 or IPv6 address.
vpn-id <i>vpn-id</i>	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 503

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

<i>(hostname ip-address)</i>	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 <i>number</i>	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 <i>bytes</i>	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 (<i>interface-name ip-address</i>)	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 <i>seconds</i>	Time to Wait between Each Ping Packet: Time to wait for a response to a ping packet. Default: 1 second.
vpn <i>vpn-id</i>	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
```

VPN	INTERFACE	IP ADDRESS	IF ADMIN STATUS	IF OPER STATUS	ENCAP TYPE	PORT TYPE	MTU	HWADDR	SPEED MBPS	DUPLEX	TCP MSS ADJUST	UPTIME	RX PACKETS	TX 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 495

[traceroute](#), on page 503

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 505

prompt1

Set the operational prompt.

prompt1 *string*

Syntax Description

<i>string</i>	<p>Operational Prompt: Set the operational prompt.</p> <p>The prompt can contain regular ASCII characters and the following special characters. Enclose the entire string in quotation marks:</p> <ul style="list-style-type: none"> • \d—Current date in the format <i>yyyy-mm-dd</i> (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 <i>hh:mm:ss</i> format. • \A—Current time in 24-hour format. • \T—Current time in 12-hour <i>hh:mm:ss</i> format. • \@—Current time in 12-hour <i>hh:mm</i> 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 <i>n</i>, 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 <i>n</i>, 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 94

[show cli](#), on page 219

prompt2

Set the configuration mode prompt.

prompt2 *string*

Syntax Description

<i>string</i>	<p>Operational Prompt:</p> <p>"<i>string</i>" Set the operational prompt. The prompt can contain regular ASCII characters and the following special characters. Enclose the entire string in quotation marks:</p> <ul style="list-style-type: none"> • \d—Current date in the format <i>yyyy-mm-dd</i> (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 <i>hh:mm:ss</i> format. • \A—Current time in 24-hour <i>hh:mm</i> format. • \T—Current time in 12-hour <i>hh:mm:ss</i> format. • \@—Current time in 12-hour <i>hh:mm</i> 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 <i>n</i>, 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 <i>n</i>, 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[promptl](#), on page 92[show cli](#), on page 219

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 505

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 144
- [show boot-partition](#), on page 200
- [show reboot history](#), on page 424
- [show software](#), on page 448
- [show system status](#), on page 461

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

<i>username</i>	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 477

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-tech	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-vmcvc.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 243

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

<i>file-path</i>	<p>Path to Certificate File: Install the certificate in specified filename.</p> <p>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.</p> <p><i>file-path</i> can be one of the following:</p> <ul style="list-style-type: none"> • <i>filename</i>—Path to a file in your home directory on the local Cisco SD-WAN device. • ftp: <i>file-path</i>—Path to a file on an FTP server. • http:// <i>url/file-path</i>—Path to a file on a webserver. • scp: <i>user@host:file-path</i> • tftp: <i>file-path</i>—Path to a file on a TFTP server.
vpn <i>vpn-id</i>	<p>Specific VPN: VPN in which the certificate file is located.</p> <p>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.</p>

Command History

Release	Modification
14.1	Command introduced.

Related Topics

[request csr upload](#), on page 106

[show certificate validity](#), on page 219

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

<i>filename</i>	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. <i>filename</i> has the format <i>viptela-release-number-x86_64.tar.gz</i> .
vpn <i>vpn-id</i>	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 retrieved 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 retrieved from VPN 0.

Command History

Release	Modification
16.2	Command introduced.

Related Topics[container](#)[request container image remove](#), on page 102

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

<i>filename</i>	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 <i>ip-address</i> <i>port-number</i>	Local Private IP Address and Port Number: Private IP address and port number for the local side of the tunnel connection. <i>port-number</i> can be a value from 0 through 65535.
remote-public-ip <i>ip-address</i> remote-public-port <i>port-number</i>	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. <i>port-number</i>

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 495

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

Command History

Release	Modification
16.1	Command introduced.

Related Topics

[request control-tunnel add](#), on page 103

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

<i>number</i>	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 105
- [show control valid-vedges](#), on page 242
- [show control valid-vsmarts](#), on page 243
- [show orchestrator valid-vedges](#), on page 380
- [show orchestrator valid-vsmarts](#), on page 381

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

<i>number</i>	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 104
- [show control valid-vedges](#), on page 242
- [show control valid-vsmarts](#), on page 243
- [show orchestrator valid-vedges](#), on page 380
- [show orchestrator valid-vsmarts](#), on page 381

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

<i>filename</i>	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 <i>vpn-id</i>	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 104
- [request controller delete serial-num](#), on page 105

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

<i>path</i>	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 <i>vpn-id</i>	(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 101

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

chassis-number <i>number</i>	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 <i>path</i>	Enterprise Root CA: Path to the enterprise root CA. The path can be an HTTP, FTP, or TFTP path.
org-name <i>name</i>	Organization Name: Name of your organization as specified in the device certificates.
port <i>port-number</i>	Port on the vBond Orchestrator: Port to use on the vBond orchestrator to reach the WAN network.
strong>serial-number	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

```

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

Related Topics

[request device-upload](#), on page 109

[show ztp entries](#), on page 484

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 <i>file-path</i>	<p>Filename: Name of a CSV file containing the chassis information required by the ZTP server.</p> <p><i>file-path</i> can be one of the following:</p> <ul style="list-style-type: none"> • <i>filename</i>—Path to a file in your home directory on the local Cisco vEdge device. • ftp: <i>file-path</i>—Path to a file on an FTP server. • http:// <i>url/file-path</i>—Path to a file on a webserver. • scp: <i>user@host:file-path</i> • <i>file-path</i>—Path to a file on a TFTP server. <p>Each row in the CSV file must contain the following information for each vEdge router:</p> <ul style="list-style-type: none"> • 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)
<i>file-path</i> vpn <i>vpn-id</i>	VPN: vpn <i>vpn-id</i> 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
```

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

Related Topics

[request device](#), on page 108

[show ztp entries](#), on page 484

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

<i>filename</i>	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 <i>vpn-id</i>	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 144
- [request software install-image](#), on page 146
- [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

<i>command</i>	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 <i>vpn-id</i>	VPN: Specific to the VPN in which to execute the command. The default <i>vpn-id</i> 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 86
[monitor stop](#), on page 86
[show jobs](#), on page 327
[vshell](#), on page 505

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

<i>filename</i>	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 95

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 <i>interface-name</i>	Interface Name: Name of the interface to reset.
vpn <i>vpn-id</i>	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 267

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 <i>number</i>	Interface Name: Name of the IPsec interface on which to force the generation of new keys for an IKE session.
vpn <i>vpn-id</i>	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
```

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

```
vEdge# request ipsec ipsec-rekey vpn 1 interface ipsec1
```

```
vEdge# show ipsec ike sessions
```

VPN	IF NAME	VERSION	SOURCE IP	SOURCE PORT	DEST IP	DEST PORT	INITIATOR SPI	RESPONDER SPI	CIPHER SUITE	DH GROUP	STATE	UPTIME
1	ipsecl	2	10.1.16.16	4500	10.1.15.15	4500	ecdc1457fbd38824	1ee5fd9f7a645c44	aes256-cbc-shal	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 309

[show ipsec ike outbound-connections](#), on page 310

[show ipsec ike sessions](#), on page 312

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 <i>number</i>	Interface Name: Name of the IPsec interface on which to force the generation of new keys for an IKE session.
vpn <i>vpn-id</i>	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 IP	SOURCE PORT	DEST IP	DEST PORT	NEW SPI	OLD SPI	CIPHER SUITE	NEW KEY HASH	OLD KEY HASH
10.1.15.15	4500	10.1.16.16	4500	263	262	aes256-cbc-shal	****2474	****ea42

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

SOURCE IP	SOURCE PORT	DEST IP	DEST PORT	NEW SPI	OLD SPI	CIPHER SUITE	NEW KEY HASH	OLD 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 309

[show ipsec ike outbound-connections](#), on page 310

[show ipsec ike sessions](#), on page 312

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	<p>Display Java Process Information: Display information from Java processes running on all vManage cluster components.</p> <p><i>option</i> can be one of the following:</p> <ul style="list-style-type: none"> • 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 125
- [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.
---------------	---

jcmm <i>option</i>	<p>Display Java Process Information: Display information from a Java process running on the vManage web server.</p> <p><i>option</i> can be one of the following:</p> <ul style="list-style-type: none"> • 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 <i>large-logo-filename</i> <i>small-logo-filename</i>	<p>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.</p>
resize-data-partition	<p>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.</p>
restart	<p>Restart the vManage Web Server: Restart the local vManage web server.</p>
diagnostics	<p>Run Diagnostics on vManage Web Server: Run diagnostics on the vManage web server.</p>
start	<p>Start the local vManage web server.</p>
stop	<p>Stop the vManage Web Server: Stop the local vManage web server.</p>

software <i>option</i>	<p>Web Application Server Software Control: Control the software running on the vManage application server. can be:</p> <p><i>option</i> can be:</p> <ul style="list-style-type: none"> • 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.
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 115
- [request nms configuration-db](#), on page 121
- [request nms coordination-server](#), on page 123
- [request nms messaging-server](#), on page 125
- [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 local Cisco 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 <i>path</i>	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 backup files are stored in the location that you specify with the backup path path keyword. A backup file is named configdb-daily.x.tar.gz, where <i>x</i> 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. <i>option</i> can be one of the following: <ul style="list-style-type: none"> • 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.

Release	Modification
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 local Cisco 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 115
- [request nms application-server](#), on page 116
- [request nms coordination-server](#), on page 123
- [request nms messaging-server](#), on page 125
- [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 vManage 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 <i>option</i>	<p>Display Java Process Information: Display information from Java processes running on the coordination server.</p> <p><i>option</i> can be one of the following:</p> <ul style="list-style-type: none"> • 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 115
- [request nms application-server](#), on page 116
- [request nms configuration-db](#), on page 121
- [request nms messaging-server](#), on page 125
- [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** | **jcnd** *option* | **restart** | **start** | **status** | **stop**)

Syntax Description

status	Determine the Status of the Messaging Server: Determine the status of the local messaging server.
jcnd <i>option</i>	<p>Display Java Process Information: Display information from Java processes running on the messaging server.</p> <p><i>option</i> can be one of the following:</p> <ul style="list-style-type: none"> • 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 115
- [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: <ul style="list-style-type: none"> • 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.
<i>restart</i>	Restart the local vManage statistics database.
<i>start</i>	Start the local vManage statistics database.
<i>status</i>	Determine the status of the local vManage statistics database.
<i>stop</i>	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/securism-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 115
- [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

<i>start</i>	Start or restart the local vManage NMS.
<i>status</i>	Determine the status of the local vManage NMS.
<i>stop</i>	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.
<i>ip-address</i>	Enter the Cisco SD-WAN Manager management IP address. Default: 127.0.0.1
<i>port</i>	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	
<i>serial-number</i>	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	
<i>serial-number</i>	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

<i>color</i>	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 364

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$0D2MxOsG1Nqp/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-shal-hmac shal-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 424

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 80
- [file show](#), on page 80
- [job stop](#), on page 83
- [logging disk](#)
- [logging server](#)
- [monitor start](#), on page 86
- [monitor stop](#), on page 86
- [show jobs](#), on page 327
- [show logging](#), on page 331

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 <i>color</i>	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-multiplier 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 <i>filename</i>	Installs the specified file that contains the root certificate authority CRL.
vpn <i>vpn-id</i>	Specifies the VPN in which the CRL file is located.
uninstall	Uninstalls 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 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 189
- [show ipsec inbound-connections](#), on page 313
- [show ipsec local-sa](#), on page 314
- [show ipsec outbound-connections](#), on page 315

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.
<i>software-image</i>	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.
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 146
- [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 448

[show version](#), on page 478

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 <i>minutes</i>	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.
<i>filename</i>	<p>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.</p> <p>For a vEdge router, filename has the format <code>SD-WAN-release-number-mips64.tar.bz2</code> (this image includes both the vEdge and the software for a hardware-based vBond orchestrator).</p> <p>For a vSmart controller and software-based vBond orchestrator, filename has the format <code>SD-WAN-release-number-x86_64.tar.bz2</code>.</p> <p>For a vManage NMS, filename has the format <code>vmanage-release-number-x86_64.tar.bz2</code>.</p> <p>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 <code>SD-WAN-16.1-mips64.tar.bz2</code>, for the first image released in 2016.</p> <p>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.</p>
reboot no-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 <i>vpn-id</i>	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 95
- [request software install-image](#), on page 146
- [request software secure-boot](#), on page 148
- [request software verify-image](#), on page 151
- [show boot-partition](#), on page 200
- [show software](#), on page 448

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

<i>file-system-name</i>	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.
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 144
- [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 448
- [show version](#), on page 478

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

<i>file-system-name</i>	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 146
- [request software reset](#), on page 147
- [request software secure-boot](#), on page 148
- [request software set-default](#), on page 149
- [show software](#), on page 448
- [show version](#), on page 478

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 95
- [request admin-tech](#), on page 98
- [request download](#), on page 110
- [request software activate](#), on page 142
- [request software install](#), on page 144
- [request software install-image](#), on page 146
- [request software remove](#), on page 146
- [request software secure-boot](#), on page 148
- [request software set-default](#), on page 149
- [show software](#), on page 448
- [show version](#), on page 478

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 95
- [request software install-image](#), on page 146
- [request software install](#), on page 144
- [request software verify-image](#), on page 151
- [show boot-partition](#), on page 200
- [show software](#), on page 448

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

<i>image-name</i>	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 144
- [request software remove](#), on page 146
- [request software reset](#), on page 147
- [request software secure-boot](#), on page 148
- [show software](#), on page 448
- [show version](#), on page 478

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 144
[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

<i>filename</i>	Name of the Cisco SD-WAN software image file. This file is a compressed tar file (<i>filename extension tar.gz</i>) on the local device. The tar file names have the following format, where <i>x.x.x</i> represents the release version: <ul style="list-style-type: none"> • 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 144
- [request software install-image](#), on page 146
- [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 <i>vpn-id</i>	VPN ID to capture the data stream details for.
interface <i>interface-name</i>	Interface to capture data stream details for.
session-id <i>session-id</i>	Session ID to capture the data stream details for.
dst-ip <i>ip-address</i>	(Optional) Destination IP address to capture the data stream details for.

dst-port <i>port</i>	(Optional) Destination port to capture the data stream details for.
src-ip <i>ip-address</i>	(Optional) Source IP address to capture the data stream details for.
src-port <i>port</i>	(Optional) Source port to capture the data stream details for.
protocol <i>number</i>	(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	
<i>filename</i>	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.
<i>destination</i>	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 <i>vpn-id</i>	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.

Release	Modification
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 144
- [request software install-image](#), on page 146
- [request software remove](#), on page 146
- [request software reset](#), on page 147
- [show software](#), on page 448

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.

Command Hierarchy

request vedge [**add** | **delete**] **serial-num** *number* **chassis-num** *number*

Syntax Description

add serial-num <i>number</i> chassis-num <i>number</i>	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.
delete serial-num <i>number</i> chassis-num <i>number</i>	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 157
- [show control valid-vedges](#), on page 242
- [show control valid-vsmarts](#), on page 243
- [show orchestrator valid-vedges](#), on page 380
- [show orchestrator valid-vsmarts](#), on page 381

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	Parameter	Description
	chassis-number <i>number</i>	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 <i>token</i>	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	Parameter	Description
	serial-num <i>number</i>	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 154
- [request vsmart delete serial-num](#), on page 156
- [request vsmart-upload serial-file](#), on page 157
- [show control valid-vedges](#), on page 242
- [show control valid-vsmarts](#), on page 243
- [show orchestrator valid-vedges](#), on page 380
- [show orchestrator valid-vsmarts](#), on page 381

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*

<i>number</i>	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 154
- [request vsmart add serial-num](#), on page 155
- [request vsmart-upload serial-file](#), on page 157
- [show control valid-vedges](#), on page 242
- [show control valid-vsmarts](#), on page 243
- [show orchestrator valid-vedges](#), on page 380
- [show orchestrator valid-vsmarts](#), on page 381

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 <i>filename</i>	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 <i>vpn-id</i>	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 156

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 <i>number</i>	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 158
- [show cli](#), on page 219

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 <i>number</i>	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 219

set platform software trace

To configure the binary trace level for one or all modules of a Cisco SD-WAN process on a specific hardware slot, issue the command **set platform software trace** in the Privileged EXEC mode.

set platform software trace *process slot module level*

Syntax Description	<i>process</i>	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'.
	<i>level</i>	Hardware slot from which process messages must be logged.
	<i>module</i>	Configure the trace level for one or all the modules of the process.
	<i>slot</i>	Select one of the following trace levels: <ul style="list-style-type: none"> • debug: Debug messages • emergency: Emergency possible message • error: Error messages • info: Informational messages • noise: Maximum possible message • notice: Notice messages • verbose: Verbose debug messages • warning: Warning messages
Command Default	Notice level	
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'.
	Cisco IOS XE Catalyst SD-WAN Release 17.11.1a	New parameters are introduced for better binary configuration.

Usage Guidelines

Table 3: Supported Cisco SD-WAN Daemons

Cisco SD-WAN Daemons	Supported from Release
<ul style="list-style-type: none"> • fpm • ftm • ompd • vdaemon • cfgmgr 	Cisco IOS XE Catalyst SD-WAN Release 17.4.1a

Example

In the following example, the binary trace level for the 'config' module of the 'fpm' process on the 'RP active' FRU is set to 'debug'.

```
Device# set platform software trace fpm RP active config debug
```

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 <i>username</i>	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: <ul style="list-style-type: none"> • 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. <p>Note Watermarks for disk read and write speeds can only be configured in a Cisco vManage server.</p>

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
centage: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
          WATERMARK    WATERMARK    WATERMARK
FILESYSTEM 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 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
```

VPN ID	COLLECTOR		CONNECTION STATE	PROTOCOL	IPFIX VERSION	CONNECTION RETRY	TEMPLATE PACKETS	DATA PACKETS
	IP ADDRESS	COLLECTOR PORT						
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 165
- [show app cflowd flows](#), on page 166
- [show app cflowd statistics](#), on page 168
- [show app cflowd template](#), on page 169
- [show policy from-vsmart](#), on page 411

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 164
- [show app cflowd flows](#), on page 166
- [show app cflowd statistics](#), on page 168
- [show app cflowd template](#), on page 169

[show policy from-vsmart](#), on page 411

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 <i>vpn-id</i> src-ip <i>ip-address</i> dest-ip <i>ip-address</i> src-port <i>port-number</i> dest-port <i>port-number</i> dscp <i>value</i> ip-proto <i>protocol-number</i>	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 *.

<i>flow-parameter</i>	<p>Flow Parameter:</p> <p>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. <i>flow-parameter</i> can be one of the following:</p> <ul style="list-style-type: none"> • egress-intf-name <i>interface-name</i>—Flow's outgoing interface. • icmp-opcode <i>value</i>—Flow's ICMP operational code. • ingress-intf-name <i>interface-name</i>—Flow's incoming interface. • max-length <i>bytes</i>—Maximum IP packet length in the flow. • min-length <i>bytes</i>—Minimum IP packet length in the flow. • nhop-ip <i>ip-address</i>—IP address of the flow's next hop. • start-time <i>time</i>—Flow's start time. • tcp-cntrl-bits <i>bit</i>—Flow's TCP control bit value. • time-to-expire <i>seconds</i>—Time until the flow expires. • total-bytes <i>number</i>—Total number of bytes in the flow. • total-packets <i>number</i>—Total number of packets in the flow.
vpn <i>vpn-id</i>	<p>VPN</p> <p>Display cflowd information for flows in a specific VPN.</p>

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
```

APP VPN NAME	SRC IP	DEST IP	SRC PORT	DEST PORT	DSCP	TCP				TOTAL PKTS	TOTAL BYTES	MIN LEN	MAX LEN	START TIME	TIME TO EXPIRE	EGRESS INTF	INGRESS INTF
						IP	CNTRL BITS	ICMP OPCODE	NHOP IP								
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	ipsecl	ge0/3
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	ipsecl

```
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 164
- [show app cflowd flow-count](#), on page 165
- [show app cflowd statistics](#), on page 168
- [show app cflowd template](#), on page 169
- [show policy from-vsmart](#), on page 411

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 165
- [show app cflowd flows](#), on page 166
- [show app cflowd template](#), on page 169
- [show policy from-vsmart](#), on page 411

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.
name <i>template-name</i>	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 164
[show app cflowd flow-count](#), on page 165
[show app cflowd flows](#), on page 166
[show app cflowd statistics](#), on page 168
[show policy from-vsmart](#), on page 411

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.
vpn <i>vpn-id</i>	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**

VPN	APPLICATION OCTETS	FAMILY	EXPIRED		PACKETS
			FLows	LAST SEEN	
1	dns 10326	Network Service	25	2017-05-15T14:05:23+00:00	100
1	google_accounts 6520	Web	2	2017-05-15T14:04:43+00:00	28
1	https 191073	Web	35	2017-05-15T14:04:43+00:00	1282

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 171

[show app dpi supported-applications](#), on page 174

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	<p>Detailed Information</p> <p>Display detailed information about DPI traffic flows, including total packet and octet counts, and which tunnel (TLOC) the flow was received and transmitted on.</p> <p>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.</p> <p>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.</p>
<i>source-ip-address</i>	<p>Source IP Address</p> <p>Within a specific VPN, list the applications flows with the specified source IP address.</p>
vpn <i>vpn-id</i>	<p>Specific VPN</p> <p>List all application flows running in the subnets in the specific VPN.</p>

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
```

show app dpi flows

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 encaps dtls
  remote-tloc 2001:DB8:1::1
  remote-tloc color default
  remote-tloc encaps 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 encaps dtls
  remote-tloc 2001:DB8:1::1
  remote-tloc color default
  remote-tloc encaps 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 encaps ipsec
  remote-tloc TLOC IP 172.31.255.254
  remote-tloc color lte
  remote-tloc encaps 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 encaps ipsec
  remote-tloc TLOC IP 172.31.255.254
  remote-tloc color lte
  remote-tloc encaps 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 170

[show app dpi supported-applications](#), on page 174

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 170
- [show app dpi flows](#), on page 171
- [show app dpi supported-applications](#), on page 174

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 ID	FAMILY	APPLICATION LONG NAME	FAMILY LONG NAME
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

show app dpi supported-applications

```

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
bitseducer	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 ID	APPLICATION	FAMILY	APPLICATION LONG NAME	FAMILY LONG NAME
--------	-------------	--------	-----------------------	------------------


```

-----
ah      720      network_service      Authentication Header      Network Service
dr      2043     web                  Dr.dk                      Web
dv      1861     web                  DV.is                      Web
hs      2097     web                  Hs.fi (Helsingin Sanomat)  Web
il      637      network_service      Internet Link (Transport protocol)  Network Service
ip      81       network_service      Internet Protocol          Network Service
ja      1897     web                  Ja.is                      Web
mk      1213     web                  Mk.co.kr                   Web
mq      312     application_service  IBM Websphere MQ          Application
Service
mt      1214     web                  mt                          Web
nu      2119     web                  Nu.nl                      Web
pp      938      network_service      ISO 8823 Presentation Protocol  Network Service
qq      156     instant_messaging   QQ                          Instant Messaging
rt      2064     web                  Rt.com                     Web
sm      678      network_service      Sparse Mode                Network Service
sp      937      network_service      ISO 8327 Session Protocol   Network Service
ss      1943     web                  Ss.lv                      Web
st      685      network_service      Stream protocol            Network Service
ts      2427     web                  Ts                          Web
tu      1060     audio_video         Tu.tv                      Audio/Video
tv      1062     web                  Tv.com                     Web
vg      2076     web                  Vg.no                      Web
wp      2078     web                  Wp.pl                      Web
xl      2190     web                  Xl                          Web
y8      1758     web                  Y8.com                     Web
yr      2579     web                  Yr                          Web
17u    1341     web                  17u.com                    Web
24h    1820     web                  24h.com.vn                 Web
2ch    1316     web                  2ch.net                    Web
3pc    606      network_service      Third Party Connect        Network Service
abc    1690     peer_to_peer        ABC Bittorrent client      Peer to Peer

```

show app dpi supported-applications

```

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 NAME	FAMILY ID	APPLICATION LONG NAME	FAMILY LONG
mk	web 1213	Mk.co.kr	Web
mq Service	application_service 312	IBM Websphere MQ	Application
mt	web 1214	mt	Web
mbc	web 1231	MBC (Munhwa Broadcasting Corp)	Web
mbl	web 2110	Mbl.is	Web
mbn	web 1212	MBN.co.kr	Web
mcs Service	network_service 112	Multipoint Communication Service	Network
mms	audio_video 115	Microsoft Multimedia Streaming	Audio/Video
mog	audio_video 447	MOG.com	Audio/Video
mop	web 1276	Mop.com	Web
msn Messaging	instant_messaging 120	MSN Messenger	Instant
mtn	web 3023	MTN Group	Web
mtp Service	network_service 656	Multicast Transport Protocol	Network
mtv	web 1021	MTV	Web
mux Service	network_service 657	Multiplexing	Network
m2pa Service	network_service 1304	MTP2 User Peer-to-Peer Adaptation Layer	Network
m2ua Service	network_service 1302	MTP2 User Adaptation Layer	Network
m3ua Service	network_service 1301	MTP3 User Adaptation Layer	Network
mako	web 2107	Mako.co.il	Web

```

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  Miros (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 170
- [show app cflowd flows](#), on page 166
- [show app dpi flows](#), on page 171

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.
vpnvpn-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 180
- [show system statistics](#), on page 456

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.
<i>flow-parameter</i>	Flow Parameter Display flow logging information for a specific parameter. <i>flow-parameter</i> 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 <i>vpn-id</i>	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
                                EGRESS INGRESS
                                DEST IP CNTRL ICMP
TOTAL          SRC      TIME          TO      INTF      INTF      POLICY      TOTAL
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 179[show system statistics](#), on page 456

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 [<i>milliseconds</i>]	Packet Latency Display information for all packet latency values or for the specified latency value operating on the vEdge router.
loss [<i>percentage</i>]	Packet Loss Display information for all packet loss values or for the specified loss value operating on the vEdge router.
name [<i>string</i>]	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 185

[show bfd sessions](#), on page 189

[show policy service-path](#), on page 415

[show policy tunnel-path](#), on page 416

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-stats**show 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 <i>color</i>	Local TLOC Color Display data traffic statistics for the specified local TLOC color.
remote-system-ip <i>ip-address</i>	Remote System IP Address Display data traffic statistics for the specified remote system.
remote-color <i>color</i>	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
```

INDEX	TOTAL PACKETS	LOSS	AVERAGE LATENCY	AVERAGE JITTER	TX DATA PKTS	RX DATA 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
```

INDEX	TOTAL PACKETS	LOSS	AVERAGE LATENCY	AVERAGE JITTER	TX DATA PKTS	RX DATA 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
```

INDEX	TOTAL PACKETS	LOSS	AVERAGE LATENCY	AVERAGE JITTER	TX DATA PKTS	RX DATA 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 INDEX	AVERAGE PACKETS	AVERAGE LOSS	AVERAGE LATENCY	TX DATA JITTER	RX DATA PKTS	RX DATA 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 184
- [show bfd sessions](#), on page 189
- [show policy service-path](#), on page 415
- [show policy tunnel-path](#), on page 416

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 <i>vpn-id</i>	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 322

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 <i>state</i>	BFD State Display the history of BFD sessions in a particular state. <i>state</i> can be one of the following: admin-down , down , init , invalid , and up .
color <i>color</i>	Color Display the history of BFD sessions for a specific traffic flow.
site-id <i>site-id</i>	Site ID Display the history of BFD sessions to a specific Cisco SD-WAN network site.

system-ip <i>ip-address</i>	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 SYSTEM TIME	TX IP	SITE ID	COLOR PKTS	PKTS	STATE DEL	IP	PORT	ENCAP
10.0.104.1 2020-07-21T16:44:54+0000		300	lte	0	up	192.168.10.100	12366	ipsec
10.0.104.1 2020-07-21T16:46:46+0000		300	lte	0	down	192.168.10.100	12366	ipsec
10.0.104.1 2020-07-21T16:46:46+0000		300	lte	0	down	192.168.10.100	12366	ipsec
10.0.104.1 2020-07-21T16:46:46+0000		300	lte	0	inactive	192.168.10.100	12366	ipsec
10.0.104.1 2020-07-21T18:39:02+0000		300	lte	0	down	192.168.10.100	12366	ipsec
10.0.104.1 2020-07-21T18:39:04+0000		300	lte	0	up	192.168.10.100	12366	ipsec
10.0.104.1 2020-07-21T18:40:52+0000		300	lte	0	down	192.168.10.100	12366	ipsec
10.0.104.1 2020-07-21T18:40:52+0000		300	lte	0	down	192.168.10.100	12366	ipsec
10.0.104.1 2020-07-21T18:40:52+0000		300	lte	0	inactive	192.168.10.100	12366	ipsec

Related Topics

- [bfd color](#)
- [show bfd sessions](#), on page 189
- [show bfd summary](#), on page 192
- [show bfd tloc-summary-list](#), on page 193

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 <i>state</i>	BFD State Display the history of BFD sessions in a particular state. <i>state</i> can be one of the following: admin-down , down , init , invalid , and up .
color <i>color</i>	Color Display the history of BFD sessions for a specific traffic flow.
site-id <i>id</i>	Site ID Display the history of BFD sessions to a specific Cisco SD-WAN network site.
system-ip <i>ip-address</i>	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
```

DST PUBLIC SYSTEM IP	DST PUBLIC SITE ID PORT	PUBLIC STATE ENCAP	SOURCE TLOC DETECT COLOR MULTIPLIER	TLOC TX INTERVAL (msec)	REMOTE TLOC COLOR	UPTIME	SOURCE IP 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	privatel		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	privatel		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      ipsec 20      1000      0:01:40:31 0
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      ipsec 20      1000      0:01:33:46 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      ipsec 20      1000      0:01:52:45 0
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      ipsec 20      1000      0:17:04:31 5
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      ipsec 20      1000      0:01:41:27 13
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      ipsec 20      1000      0:01:41:28 11
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      ipsec 20      1000      0:01:47:09 5
174.11.9.2       12346     ipsec 20      1000      0:01:47:09 5

172.16.241.10     300010010 up      mpls      mpls      184.116.102.2
174.11.10.2      12346     ipsec 20      1000      0:16:54:13 1

172.16.241.10     300010010 up      ipsec 20      1000      0:16:54:14 1
174.11.10.2      12346     ipsec 20      1000      0:16:54:14 1

172.16.241.11     300010011 up      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 188[show bfd summary](#), on page 192[show bfd tloc-summary-list](#), on page 193

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 188[show bfd sessions](#), on page 189[show bfd tloc-summary-list](#), on page 193

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.
<i>interface-name</i>	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
```

IFNAME	ENCAP	SESSIONS TOTAL	SESSIONS UP	SESSIONS 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 188
- [show bfd sessions](#), on page 189
- [show bfd summary](#), on page 192

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 [<i>address-family-property</i>]	<p>BGP Address Family Properties</p> <p>List information about a specific BGP address family property. <i>address-family-property</i> 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.</p>

detail	Detailed Information Show detailed information.
vpn <i>vpn-id</i>	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 196

[show bgp summary](#), on page 199

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.
<i>prefix/length prefix</i> vpn <i>vpn-id</i>	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 <i>vpn-id</i>	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
```

VPN	PREFIX STATUS	TAG	INFO			LOCAL			AS	
			ID	NEXTHOP	METRIC	PREF	WEIGHT	ORIGIN	PATH	PATH
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 So0:0:600
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 So0:0:600
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 So0:0:600
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 194

[show bgp summary](#), on page 199

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 <i>vpn-id</i>	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 194

[show bgp routes](#), on page 196

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.
<i>partition-number</i>	Specific Partition Display information for the specific boot partition. <i>partition-number</i> 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 95
- [request software activate](#), on page 142
- [request software install](#), on page 144

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 is configured.
<i>bridge-id</i>	Specific Bridging Domain List information about the interface associated with a specific bridging domain.
<i>interface-name</i> (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	OPER	ENCAP	IFINDEX	MTU	RX	RX	TX	TX
			STATUS	STATUS	TYPE			PKTS	OCTETS	PKTS	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 202

[show bridge table](#), on page 203

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
```

BRIDGE	INTERFACE	MAC ADDR	STATE	RX PKTS	RX OCTETS	TX PKTS	TX 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 201

[show bridge table](#), on page 203

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		VLAN	INTERFACE	MAX-MACS	MACS	AGE-TIME(sec)	PKTS	OCTETS	PKTS	OCTETS
BRIDGE	NAME	PKTS	OCTETS									
1		1		1	irb1	1024	0	300	2	168	0	0
2	168	0		0	0	0						
2		2		2	irb2	1024	0	300	3	242	0	0
3	242	0		0	0	0						
50		-		-	irb50	1024	0	300	2	140	0	0
2	140	0		0	0	0						

Related Topics

[bridge](#)

[clear bridge mac](#), on page 23

[clear bridge statistics](#), on page 24

[show bridge interface](#), on page 201

[show bridge mac](#), on page 202

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 205
- [show cellular profiles](#), on page 207
- [show cellular radio](#), on page 208
- [show cellular sessions](#), on page 209
- [show cellular status](#), on page 210
- [show interface](#), on page 267

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 204

[show cellular profiles](#), on page 207
[show cellular radio](#), on page 208
[show cellular sessions](#), on page 209
[show cellular status](#), on page 210
[show interface](#), on page 267

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
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 204
[show cellular network](#), on page 205
[show cellular radio](#), on page 208
[show cellular sessions](#), on page 209

[show cellular status](#), on page 210

[show interface](#), on page 267

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 204

[show cellular network](#), on page 205

[show cellular profiles](#), on page 207

[show cellular sessions](#), on page 209

[show cellular status](#), on page 210

[show interface](#), on page 267

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 204
- [show cellular network](#), on page 205
- [show cellular profiles](#), on page 207
- [show cellular radio](#), on page 208
- [show cellular status](#), on page 210
- [show interface](#), on page 267

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 204
- [show cellular network](#), on page 205
- [show cellular profiles](#), on page 207
- [show cellular radio](#), on page 208
- [show cellular sessions](#), on page 209
- [show interface](#), on page 267

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 214
[show certificate serial](#), on page 216
[show certificate signing-request](#), on page 217
[show certificate validity](#), on page 219

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 212

[show control connections](#), on page 229

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 210

[show certificate serial](#), on page 216

[show certificate validity](#), on page 219

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 = 1102136130018 Board_id_serial_num : 10000161

```

Related Topics

[request vsmart-upload serial-file](#), on page 157

- [show certificate installed](#), on page 210
- [show certificate root-ca-cert](#), on page 214
- [show certificate signing-request](#), on page 217
- [show certificate validity](#), on page 219

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-----
MIIDUzCCAjsCAQAwgdIx CzA JBgNVBAYTAlVTMRMwEQYDVQQIEWpDYWxpZm9ybm1h
MREwDwYDVQQHEwhTYW4gSm9zZTEfMBOGA1UECXMWdk1QdGVsYSBjb20wVncmVz
c21vbjEUMBIGA1UEChMLdk1QdGVsYSBjb20wVncmVzZTEfMBOGA1UECXMWdk1QdGVs
NjNhMy03ODhhLTRjODQtYjVhNy1mYmI3NGVjYTU3ZGIudmlwdGVsYS5jb20xIjAg
BgkqhkiG9w0BCQEW3N1cHBvcnRA dmlwdGVsYS5jb20wggEiMA0GCSqGSIb3DQEB
AQUAA4IBDwAwggEKAoIBAQC hnadC7X9W584ygurpn3HYFHnHgAwixKQ1mGoOSUp5
f2Cic+eJxNtzh5dqnELOOUYdmwBL+8A83CCX04wb0XoDQ3N1OPpaMSt00uIOFq4F
GjO2/VhfyYbjg7MHFjA06dyK/qfYtu7XWSQenzC4u5nat1aUf2HzXZo/OU1vJB6E
2zlqyiOU8xRhe9jRRVJl6RdxPZGjHEW6GihIyhdjTdz/E46EZZSKPERJ8i/p7HDm
zPUjp/RdLw1q7M4ZkK/frzB2+huGE1HRn2qGS6ti2FrLNXTxNgm4jHi+Heubs1p5
xoCtV1WpNr+cnfv19721EONPsnR6oORZR6SCxevRcUgTAGMBAAGGozA5BgkqhkiG
9w0BCQ4xLDAqMAkGA1UdEwQCMAAwHQYDVRO0BBYEFBKI38vS/QQkgzLzxAgyd2P
BVGKMA0GCSqGSIb3DQEBBQUAA4IBAQBbot83yN3VE2XpHqOKnxU6vce0expT4dOn
Idl4L0ftZ39FoubcHKw6cwPjEj9GVV4xBnEsdKYGguiAT/fmpsYMNnEiYeb4pGyy
yuw3L4JpmXPciS/EDq9VV2nMWTXPTYxNuu2kc/q20kFMyfZcALsZiBt4YEgKHG
3d3KCxwLBmMTLkfk/wFeYXnWYu648aVCWoCywUQNqMQwKzXcznGw86ahMhQ180Ij
Arv0+DmLTWVjSLU1VZSZBQS57M9FeycRm/qfeJVqYj3UXVwSKkAZA2WGg4k88+ty
fsfUQzxBI03GRY1qVJqMsI017S89COXZPnoVCaC05RCqV+jcTZCd
-----END CERTIFICATE REQUEST-----
```

show certificate signing-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 210
- [show certificate root-ca-cert](#), on page 214
- [show certificate serial](#), on page 216
- [show certificate validity](#), on page 219

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 101
- [show certificate installed](#), on page 210
- [show certificate root-ca-cert](#), on page 214
- [show certificate serial](#), on page 216
- [show certificate signing-request](#), on page 217

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 82
- [idle-timeout](#), on page 82
- [paginate](#), on page 88
- [prompt1](#), on page 92
- [prompt2](#), on page 94
- [screen-length](#), on page 157
- [screen-width](#), on page 158
- [timestamp](#), on page 489

show clock

show clock—Display the system time.

Command Syntax

show clock

Syntax Description

Nre	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 476

[timestamp](#), on page 489

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.
<i>vpn-id</i>	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
```

LOCAL VPN COLOR	REMOTE APPLICATION COLOR	EXIT TYPE	GATEWAY SYSTEM IP	INTERFACE	LATENCY	LOSS
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 222
- [show cloudexpress local-exits](#), on page 223
- [show omp cloudexpress](#), on page 346

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.
<i>vpn-id</i>	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
```

VPN	APPLICATION	GATEWAY IP	LATENCY	LOSS	LOCAL COLOR	REMOTE 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 221
- [show cloudexpress local-exits](#), on page 223
- [show omp cloudexpress](#), on page 346

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.
<i>vpn-id</i>	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 223

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.
<i>number</i>	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
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 <i>instance-name</i>	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 226

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
<i>instance-parameter</i>	<p>Specific Instance Parameter</p> <p>List information about a specific parameter for a container instance. <i>instance-parameter</i> can be one of the following, which correspond to the column headers in the command output:</p> <ul style="list-style-type: none"> • admin-state(down up) • image<i>image-name</i> • interface(host-ip-address ip-address ip-address) • oper-state(down up) • personality<i>device-type</i>

Release	Modification
16.2.	Command introduced.

Examples

Show container instances

```
vContainer# show container instances
```

```

NAME          ADMIN STATE  OPER STATE  IMAGE          PERSONALITY  IF NAME  IP ADDRESS  HOST IP 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 226

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
<i>index</i> [<i>parameter</i>]	Information about a Specific Parameter Display configuration information about a specific parameter, starting with the index number of the control connection. <i>parameter</i> can be one of the following: affe-cl (current controller group ID list), affe-ecl (effective controller group ID list), affe-equil (equilibrium status), affe-erve (count of effective required vSmart controllers), and affe-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 228

[show control connections](#), on page 229

[show control local-properties](#), on page 235

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
<i>index</i> [<i>parameter</i>]	Information about a Specific Parameter Display configuration information about a specific parameter, starting with the index number of the control connection. <i>parameter</i> 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 227
- [show control connections](#), on page 229
- [show control local-properties](#), on page 235

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 [<i>parameters</i>]	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. <i>parameters</i> is one or more of the column headers in the show control connections command output.
vedge [<i>parameters</i>]	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. <i>parameters</i> 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 [<i>parameters</i>]	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. <i>parameters</i> is one or more of the column headers in the show control connections command output.
controller-group-id <i>number</i>	Controller Group (On vEdge routers only). Display information about a specific controller group. <i>number</i> 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.

Release	Modification
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 vManage 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
CONTROLLER
PEER  PEER PEER              SITE  DOMAIN PEER              PRIV
  PEER
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              SITE  DOMAIN PEER              PRIV
                                PEER
INDEX TYPE  PROT SYSTEM IP        ID    ID    PRIVATE IP              STATE
  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 212
- [show control connections-history](#), on page 232
- [show control local-properties](#), on page 235
- [show control summary](#), on page 241
- [show orchestrator connections](#), on page 370
- [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.

<i>connection-parameter</i>	<p>Specific Connection Parameter</p> <p>List the connection history only for those items match the connection parameter. <i>connection-parameter</i> 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.</p>
<i>index</i>	<p>Specific History Item</p> <p>List the connection history only for the specific item in the history list.</p>

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. device.	NOVMCFG - No cfg in vmanage for device.
BDSGVERFL - Board ID Signature Verify Failure. entry in ZTP.	NOZTPEN - No/Bad chassis-number
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. ID failed.	RDSIGFBD - Read Signature from Board
CRTVERFL - Fail to verify Peer Certificate. SSL context.	SSLNFAIL - Failure to create new
CTORGNMMIS - Certificate Org name mismatch.	SERNTPRES - Serial Number not present.
DCONFAL - 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. to BoardID.	TXCHTOBD - Failed to send challenge
DISTLOC - TLOC Disabled. Bad Register msg.	UNMSGBDRG - Unknown Message type or
DUPSER - Duplicate Serial Number. Unauthenticated peer.	UNAUTHHEL - Recd Hello from
DUPCLHELO - Recd a Dup Client Hello, Reset Gl Peer.	VBDEST - vDaemon process terminated.
HAFAIL - SSL Handshake failure. revoked.	VECRTREV - vEdge Certification
IP_TOS - Socket Options failure. revoked.	VSCRTREV - vSmart Certificate
LISFD - Listener Socket FD Error.	VB_TMO - Peer vBond Timed out.
MGRTEBLCKD - Migration blocked. Wait for local TMO.	VM_TMO - Peer vManage Timed out.
MEMALCFL - Memory Allocation Failure.	VP_TMO - Peer vEdge Timed out.
NOACTVB - No Active vBond found to connect.	VS_TMO - Peer vSmart Timed out.
NOERR - No Error.	XTVSTRDN - Extra vSmart tear down.
NOSLPRCRT - Unable to get peer's certificate.	

PEER

show control connections-history

		PEER							
PEER	PEER	PEER	PEER	SITE	DOMAIN	PEER	PRIVATE		
	PUBLIC	PUBLIC	REMOTE		LOCAL	REMOTE	IP	REPEAT	
INSTANCE	TYPE	PROTOCOL	SYSTEM IP	ID	ID	PRIVATE IP	IP	PORT	
	PUBLIC IP	PORT	REMOTE COLOR	STATE		ERROR	ERROR	COUNT	
DOWNTIME									
0	vbond	dtls	-	default	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	-	default	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-d4ca2f45e1d
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 229
- [show orchestrator connections-history](#), on page 372

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.
------	---

<i>parameter</i>	<p>Information about a Specific Parameter</p> <p>Display configuration information about a specific parameter. <i>parameter</i> 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-interval, 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.</p>
------------------	---

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	CONTROL/	LAST	SPI TIME	NAT	
PRIVATE	CON	MAX	CONTROL/	LAST	SPI TIME	NAT		
INTERFACE	IPv4	PORT	IPv4	IPv6	LR/LB	CONNECTION	REMAINING	
PORT	VS/VM COLOR	STATE	CNTRL	STUN	LR/LB	CONNECTION	REMAINING	
TYPE	PRF							
ge0/0	10.1.15.15	12426	10.1.15.15	::	No/No	0:00:00:16	0:11:26:41	E
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	::	No/No	0:00:00:13	0:11:26:45	N
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
```

PRIVATE	PUBLIC	PUBLIC PRIVATE	RESTRICT/	PRIVATE	LAST	SPI TIME	
INTERFACE	IPv4	PORT	MAX	CONTROL/	LAST	SPI TIME	
PORT	VS/VM COLOR	STATE	CNTL	STUN	LR/LB	CONNECTION	REMAINING
						STUN	
ge0/2	10.0.5.11	12366	10.0.5.11	::	No/No	0:00:16:22	0:11:42:46
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>
      </wan-interface-list>
    </local-properties>
  </control>
</config>

```

show control local-properties

```

<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
```

INSTANCE	INTERFACE	PUBLIC		PRIVATE		PRIVATE
		IPv4	IPv6	PORT	LAST	
	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
```

INSTANCE	INTERFACE	IP	PUBLIC	PUBLIC	PRIVATE	PRIVATE	VS/VM	COLOR
			STATE	LAST	PORT	IP		
	CARRIER			CONNECTION				
0	eth1	10.0.12.22	up	12346	10.0.12.22	12346	2/0	default
	default			0:00:00:07				
1	eth1	10.0.12.22	up	12446	10.0.12.22	12446	0/0	default
	default			0:00:00:08				

Related Topics

- [show control connections](#), on page 229
- [show orchestrator local-properties](#), on page 375
- [show system status](#), on page 461
- [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.
<i>counter-name</i>	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 229

[show control summary](#), on page 241

[show orchestrator statistics](#), on page 377

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.
<i>instance</i>	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
```

INSTANCE	VBOND COUNTS	VMANAGE COUNTS	VSMART COUNTS	VEDGE COUNTS	PROTOCOL	LISTENING IP	LISTENING IPV6	LISTENING 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 229

[show orchestrator summary](#), on page 379

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
```

CHASSIS NUMBER	SERIAL 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 229
- [show control valid-vsmarts](#), on page 243
- [show orchestrator valid-vedges](#), on page 380

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	<i>serial-number</i> 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 229
- [show control valid-vedges](#), on page 242
- [show orchestrator valid-vsmarts](#), on page 381

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 <i>filename</i> List a specific core filename.
File Index Number	<i>index-number</i> 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 80
- [file show](#), on page 80
- [logging disk](#)
- [show logging](#), on page 331

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

<i>label</i>	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 <i>device-name</i> List information about a specific device that the vManage NMS is managing.
Specific State	state <i>state</i> List information about a specific state. <i>state</i> 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
```

VPN	INTERFACE INDEX	STATE DNS	ACQUIRED IP	SERVER	LEASE TIME	TIME	REMAINING	GATEWAY
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 247

[show ipv6 dhcp interface](#), on page 317

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 <i>mac-address</i> Display the DHCP binding information for the client with the specified MAC address.
DHCP Property	<i>dhcp-property</i> Display information about a specific DHCP property. <i>dhcp-property</i> can be one of client-ip <i>ip-address</i> , host-name <i>hostname</i> , lease-time , least-time-remaining , and static-binding (false true).
VPN	vpn <i>vpn-id</i> Display DHCP server information for a specific VPN.

Command History

Examples

Release	Modification
14.3.	Command introduced.

Show dhcp server

```
vEdge# show dhcp server
```

VPN	IFNAME	CLIENT MAC	CLIENT IP	LEASE TIME	REMAINING	BINDING	HOST NAME
						LEASE TIME	STATIC
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 246

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 <i>interface-name</i> [macaddress <i>mac-address</i>] 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
```

CONNECTED INTERFACE TIME	INACTIVE MAC ADDRESS TIME	SESSION ID	AUTH STATE	AUTH METHOD	VLAN	VPN	EAP METHOD	USERNAME	SESSION TIME
ge0/1 -	00:50:b6:0f:1c:84 1	-	Authenticating	Radius	12	-	(PEAP)	-	-

```
vEdge# show dot1x clients
```

CONNECTED INTERFACE TIME	INACTIVE MAC ADDRESS TIME	SESSION ID	AUTH STATE	AUTH METHOD	VLAN	VPN	EAP METHOD	USERNAME	SESSION TIME
ge0/1 9	00:50:b6:0f:1c:84 0	57E1B641-00000001	Authenticated	Radius	12	-	(PEAP)	ravi	9

Related Topics

[clear dot1x client](#), on page 33

[dot1x](#)

[show dot1x interfaces](#), on page 249

[show dot1x radius](#), on page 250

[show system statistics](#), on page 456

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 248
- [show dot1x radius](#), on page 250
- [show system statistics](#), on page 456

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 249
[radius](#)
[show dot1x clients](#), on page 248
[show system statistics](#), on page 456

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	<i>alarm-number</i> 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 253
- [show hardware inventory](#), on page 256
- [show hardware real time information](#), on page 259
- [show hardware temperature-thresholds](#), on page 260
- [show interface sfp detail](#), on page 285
- [show interface sfp diagnostic](#), on page 289

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 [<i>component-name</i>]	Component Temperature: Display the temperature of all router components or of a specific component.

Fans [<i>fan-name</i>]	<p>Fan Information:</p> <p>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.</p>
PEM [<i>pem-name</i>]	<p>PEM Information:</p> <p>Display information about all the power supply modules or about a specific power supply.</p>
PIM [<i>pim-name</i>]	<p>PIM Information:</p> <p>Display information about all the Pluggable Interface Modules (PIMs) or about a specific PIM.</p>
USB	<p>USB Information:</p> <p>USB Display information about USB controllers.</p>

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
                                     DEV
HW 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

```

show hardware inventory

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 252
[show hardware inventory](#), on page 256
[show hardware real time information](#), on page 259
[show hardware temperature-thresholds](#), on page 260

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.
<i>component-name</i>	Specific Component: Display inventory information about a specific component. <i>component-name</i> 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 110D145130039 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 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 "AM12482A23K "
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 "AM13412D227 "
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
HW TYPE INDEX VERSION PART NUMBER SERIAL 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 252
[show hardware environment](#), on page 253
[show hardware temperature-thresholds](#), on page 260
[show interface sfp detail](#), on page 285
[show interface sfp diagnostic](#), on page 289

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 [<i>component-name</i>] Display the temperature of all router components or of a specific component.
Fan Information	Fans [<i>fan-name</i>] 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
-----
Enabled  15.4    4.3    Class 4
                                           ge0/0          Up
```

Command History

Command introduced in Cisco SD-WAN Software Release 18.2.

Related Topics

- [show hardware alarms](#), on page 252
- [show hardware inventory](#), on page 256
- [show hardware real time information](#), on page 259
- [show hardware temperature-thresholds](#), on page 260
- [show interface](#), on page 267

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: 110G119160463
-----
TPM Details:
Chip name: R5H30211
Firmware name: Board ID 2.0
Firmware version: 0x20A13811
-----
Peripheral Connected:
HW
DEV
HW TYPE INDEX VERSION PART NUMBER SERIAL NUMBER HW DESCRIPTION
-----
Chassis 0 7.0 vEdge-1000 110G119160463 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 PVMI6HM 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)
```

show hardware temperature-thresholds

```

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:
-----
Critical 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 252

[show hardware environment](#), on page 253

[show hardware temperature-thresholds](#), on page 260

[show interface sfp detail](#), on page 285

[show interface sfp diagnostic](#), on page 289

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 [<i>board-number</i>]	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 SENSOR TYPE	HW DEV INDEX	FAN SPEED NORMAL	FAN SPEED HIGH	YELLOW ALARM NORMAL	YELLOW ALARM BAD FAN	RED ALARM NORMAL	RED ALARM 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 TYPE	HW DEV INDEX	VERSION	PART NUMBER	SERIAL 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 252

[show hardware environment](#), on page 253

[show hardware real time information](#), on page 259

[show hardware temperature-thresholds](#), on page 260

[show interface sfp diagnostic](#), on page 289

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.
<i>number</i>	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 82

[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.
	<i>group-property</i>	Group Properties: <i>group-property</i> Display group information for a specific IGMP multicast group. <i>group-property</i> 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 [<i>vpn-id</i>]	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
      IF          V1
      NAME  GROUP MEMBERS
VPN  NAME  GROUP  PRESENT  STATE          UPTIME    EXPIRES  V1
-----
1    ge0/5  229.229.229.229  false   members-present  0:01:33:52  -        EXPIRES  EVENT
                                           -        -        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 264

[show igmp statistics](#), on page 265

[show igmp summary](#), on page 266

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.
<i>igmp-property</i>	IGMP Options: Display interface information for a specific IGMP property. <i>igmp-property</i> 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 <i>vpn-id</i>	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
```

```

      IF          GROUP          QUERY          OTHER
VPN  NAME        IF ADDR      COUNT  QUERIER  QUERIER IP  INTERVAL  STATE  QUERIER  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 263

[show igmp statistics](#), on page 265

[show igmp summary](#), on page 266

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.
<i>group-property</i>	Specific Statistic: <i>group-property</i> Display interface information for a specific IGMP statistic. <i>statistic</i> can be one of the following: rx_error , rx_general_query , rx_group_query , rx_leave , rx_unknown , rx_v1_report , rx_v2_report , tx_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  TX
VPN  QUERY    QUERY  REPORT REPORT LEAVE  UNKNOWN  ERROR  QUERY    GROUP  TX
-----
1    0         0      0      0      0      0      0      238    0      0

```

Operational Commands

igmp

show igmp groups

show igmp interface

show igmp summary

Related Topics[igmp](#)[show igmp groups](#), on page 263[show igmp interface](#), on page 264[show igmp summary](#), on page 266

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.
<i>igmp-property</i>	IGMP Properties: <i>igmp-property</i> Display information for a specific IGMP property. <i>group-property</i> 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 263
[show igmp interface](#), on page 264
[show igmp statistics](#), on page 265

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).
<i>interface-name</i>	Specific Interface: Display information about a specific interface. On vEdge routers, <i>interface-name</i> 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, <i>interface-name</i> 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 sent 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
```

VPN	INTERFACE	AF	IP ADDRESS	IF		ENCAP	PORT TYPE	MTU	HWADDR	TCP		RX	TX	
				ADMIN	OPER					SPEED	MSS			
PACKETS	TYPE			STATUS	STATUS	TYPE			MBPS	DUPLEX	ADJUST	UPTIME	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 273
- [show interface description](#), on page 275
- [show interface errors](#), on page 277
- [show interface packet-sizes](#), on page 280
- [show interface port-stats](#), on page 282
- [show interface queue](#), on page 283
- [show interface statistics](#), on page 292
- [show ipv6 interface](#), on page 319
- [show wlan interfaces](#), on page 480

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.
<i>interface-name</i>	Specific Interface:	Display ARP statistics for a specific interface.
vpn <i>vpn-id</i>	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.

show interface arp-stats

- 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 sent 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
```

VPN	INTERFACE	AF	RX	TX	TX	RX	ADD	RX	RX	TX	RX	TX	TX
		TYPE	REQUESTS	REPLIES	REQUESTS	REPLIES	FAILS	REPLY	RATE-LIMIT	RATE-LIMIT	NON-LOCAL	REQUEST	NO-ARP
								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
```

VPN	INTERFACE	AF	RX	TX	TX	RX	ADD	RX	RX	TX	RX	TX	TX
		TYPE	REQUESTS	REPLIES	REQUESTS	REPLIES	FAILS	REPLY	RATE-LIMIT	RATE-LIMIT	NON-LOCAL	REQUEST	NO-ARP
								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 187
[show interface](#), on page 267
[show interface description](#), on page 275
[show interface errors](#), on page 277
[show interface packet-sizes](#), on page 280
[show interface port-stats](#), on page 282
[show interface queue](#), on page 283
[show interface statistics](#), on page 292

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.
<i>interface-name</i>	Specific Interface: Display information about a specific interface.
vpn <i>vpn-id</i>	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
```

VPN	INTERFACE	IP ADDRESS	IF ADMIN STATUS	IF OPER 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 267

[show interface arp-stats](#), on page 273

[show interface errors](#), on page 277

[show interface packet-sizes](#), on page 280

[show interface port-stats](#), on page 282

[show interface queue](#), on page 283

[show interface statistics](#), on page 292

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.
	<i>interface-name</i>	Specific Interface: Display error information for a specific interface.
	vpn <i>vpn-id</i>	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 configured 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 sent 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 267
- [show interface arp-stats](#), on page 273
- [show interface description](#), on page 275
- [show interface packet-sizes](#), on page 280
- [show interface port-stats](#), on page 282
- [show interface queue](#), on page 283
- [show interface statistics](#), on page 292

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.
<i>interface-name</i>	Specific Interface: <i>interface-name</i> Display packet size information for a specific interface.
vpn <i>vpn-id</i>	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
```

TX		RX		TX		RX		TX		RX		TX		RX				
PKT	PKT	PKT	PKT	PKT	PKT	PKT	PKT	PKT	PKT	PKT	PKT	PKT	PKT	PKT	PKT			
SIZE	SIZE	SIZE	SIZE	SIZE	SIZE	SIZE	SIZE	SIZE	SIZE	SIZE	SIZE	SIZE	SIZE	SIZE	SIZE			
512	1024	GT	NUM	SIZE	65	SIZE	128	256	512	1024	GT	SIZE	SIZE	SIZE	65	SIZE	128	256
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 267

[show interface arp-stats](#), on page 273

[show interface description](#), on page 275

[show interface errors](#), on page 277

[show interface port-stats](#), on page 282

[show interface queue](#), on page 283

[show interface statistics](#), on page 292

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.
<i>interface-name</i>	Specific Interface: Display port statistics for a specific interface.
vpn <i>vpn-id</i>	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
```

VPN	INTERFACE	TX FRAGMENTS NEEDED	RX PAUSE FRAGMENTS	DMAC FILTER DROPS	RX DROP PKTS	RX DROP OCTETS	RX WRED DROPS	RX LLQ DROPS	INTERFACE NOT FOUND	RX INB ERRORS	RX OVERSIZE ERRORS	RX FCS ALIGN ERRORS	RX UNDERSIZE ERRORS	RX UNDERFLOW PKTS	RX COLLISION DROPS	RX PAUSE PKTS
0	ge0/0	0	0	975	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	ge0/4	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	ge0/6	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	system	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	ge0/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	ge0/3	0	0	27	0	0	0	0	0	0	0	0	0	0	0	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 267
[show interface arp-stats](#), on page 273
[show interface description](#), on page 275
[show interface errors](#), on page 277
[show interface packet-sizes](#), on page 280
[show interface queue](#), on page 283
[show interface statistics](#), on page 292

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.
<i>interface-name</i>	Specific Interface: Display interface queue statistics for a specific interface.
vpn <i>vpn-id</i>	VPN: Display interface queue statistics for interfaces in a specific VPN.



Note The queue drop details are displayed 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
```

VPN	INTERFACE	AF TYPE	QNUM	QUEUED PACKETS	TAIL DROP PACKETS	TAIL DROP BYTES	RED DROP PACKETS	RED DROP BYTES	TX PACKETS	TX BYTES	QUEUE DEPTH	MAX DEPTH	AVG QUEUE	QUEUE PPS	QUEUE DROP 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 267

[show interface arp-stats](#), on page 273

[show interface description](#), on page 275

[show interface errors](#), on page 277

[show interface packet-sizes](#), on page 280

[show interface port-stats](#), on page 282

[show interface statistics](#), on page 292

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.
<i>interface-name</i>	Interface Name: <i>interface-name</i> 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 4: 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- μ m multimode (OM2) fiber link length	Length, in meters	A0.16
65- μ m multimode (OM1) fiber link length	Length, in meters	A0.17

Field Name	Value	SFP Address
50- μ m multimode (OM4) active cable/copper link length	Length, in meters	A0.18
50- μ m 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 252
[show hardware environment](#), on page 253
[show hardware inventory](#), on page 256
[show hardware temperature-thresholds](#), on page 260
[show interface sfp diagnostic](#), on page 289

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 displayed.

show interface sfp diagnostic [*interface-name*]**Syntax Description**

None	None: Display SFP diagnostic information for all interfaces in the router.
<i>interface-name</i>	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
```

MEASUREMENT	UNIT	LOW ALARM	LOW WARNING	HIGH WARNING	HIGH ALARM	CURRENT 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

MEASUREMENT	LOW ALARM	LOW WARNING	HIGH WARNING	HIGH 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 252

[show hardware environment](#), on page 253

[show hardware inventory](#), on page 256

[show hardware temperature-thresholds](#), on page 260

[show interface sfp detail](#), on page 285

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.
vpnvpn-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
```

		RX	RX	RX	RX	TX	TX	TX	TX	RX	RX	TX	TX	PPPOE	PPPOE	DOT1X
		PACKETS	OCTETS	ERRORS	DROPS	PACKETS	OCTETS	ERRORS	DROPS	PPS	Kbps	PPS	Kbps	PKTS	PKTS	PKTS
0	ge0/0	147389	43326584	0	360	158925	42023634	0	0	12	18	13	16	0	0	0
0	ge0/1	391	54500	0	0	5	210	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	ge0/3	396	54800	0	5	5	210	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	ge0/7	993	139010	0	89	586	233244	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
1	ge0/4	1524	148328	0	1	1175	97382	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
512 eth0        7021   859885   0      0      4194   608754  0      0      5      5      3      5      0      0
0

```

```
vSmart# show interface statistics
```

RX	TX	TX	RX	RX	RX	RX	TX	TX	TX	TX	RX
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	-	-									
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 267

[show interface arp-stats](#), on page 273

[show system buffer-pool-status](#), on page 452

[show interface description](#), on page 275

[show interface errors](#), on page 277

[show interface packet-sizes](#), on page 280

[show interface port-stats](#), on page 282

[show interface queue](#), on page 283

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 <i>ip-address</i>	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 <i>pattern</i>	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.
--	--

<i>ipv4-prefix/length</i>	Specific Prefix: List the forwarding table entry for the specified IPv4 prefix.
tloc [color <i>color</i> tloc-ip <i>ip-address</i>]	TLOC-Specific Entries: Display forwarding table IPv4 entries for specific TLOCs.
vpn <i>vpn-id</i>	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
```

VPN	PREFIX	NEXTHOP IF NAME	NEXTHOP ADDR	NEXTHOP LABEL	NEXTHOP VPN	SA INDEX	TLOC IP
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
```

VPN	PREFIX	NEXTHOP IF NAME	NEXTHOP ADDR	NEXTHOP LABEL	SA INDEX	TLOC IP
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

```

VPN	PREFIX	PROTOCOL	NEXTHOP	NEXTHOP	NEXTHOP	VPN	TLOC
IP	COLOR	ENCAP	SUB TYPE	IF NAME	ADDR		
			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**

SPEED	VPN	INTERFACE	TCP		IF		ENCAP	PORT	TYPE	MTU	HWADDR
			MSS	IP ADDRESS	ADMIN	OPER					
MBPS	DUPLEX	ADJUST	UPTIME	STATUS	STATUS	TYPE	TYPE	MTU	HWADDR		
0	10	ge0/0	10.1.15.15/24	Up	Up	null	transport	1500	00:0c:29:7d:1e:fe		
		full	0	0:02:38:45	96014	95934					
0	10	ge0/1	10.1.17.15/24	Up	Up	null	service	1500	00:0c:29:7d:1e:08		
		full	0	0:02:38:45	226	4					
0	10	ge0/2	-	Down	Up	null	service	1500	00:0c:29:7d:1e:12		
		full	0	0:02:38:45	226	0					
0	10	ge0/3	10.0.20.15/24	Up	Up	null	service	1500	00:0c:29:7d:1e:1c		

show ip fib

```

 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

```

VPN	PREFIX COLOR	FROM PEER		PATH		ATTRIBUTE		
		ENCAP	PREFERENCE	ID	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
		ipsec		172.16.255.20	103			2
1	10.2.3.0/24	172.16.255.19	-	81	2	C,I,R	installed	172.16.255.21
		ipsec		172.16.255.20	81			2
1	10.20.24.0/24	0.0.0.0	-	32769	2	C,Red,R	installed	172.16.255.15
		ipsec		0.0.0.0	32779			2
1	10.20.25.0/24	172.16.255.19	-	77	2	C,I,R	installed	172.16.255.16
		ipsec		172.16.255.20	73			2
1	56.0.1.0/24	0.0.0.0	-	32769	2	C,Red,R	installed	172.16.255.15
		ipsec		0.0.0.0	32779			2
1	60.0.1.0/24	172.16.255.19	-	78	2	C,I,R	installed	172.16.255.16
		ipsec		172.16.255.20	72			2
1	61.0.1.0/24	172.16.255.19	-	79	2	C,I,R	installed	172.16.255.16
		ipsec		172.16.255.20	71			2
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 267
[show ip routes](#), on page 305
[show ipv6 fib](#), on page 318
[show omp routes](#), on page 354

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.
	<i>group-number group-address source-address mcast-oil-list</i>	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 ID	GROUP	SOURCE	INDEX	OIL INTERFACE	OIL REMOTE 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 301

[show ip mfib stats](#), on page 300

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
```

VPN	GROUP	SOURCE	RX PKTS	RX OCTETS	TX PKTS	TX OCTETS	CTRL PKTS	RX PACKETS (PPS)	RX OCTETS (KBPS)	TX PACKETS (PPS)	TX OCTETS (KBPS)	AVG REPLICATION	RPF FAILURE	RX POLICY DROP	TX POLICY DROP	INVALID OIL FAILURE	TX 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 299[show ip mfib summary](#), on page 301[show multicast topology](#), on page 340

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.
[<i>group-number</i> <i>group-address</i> <i>source-address</i>] [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
```

VPN ID	NUM GROUP	NUM SOURCE	UPSTREAM IF	UPSTREAM TUNNEL	SERVICE OILS	TUNNEL OILS
1	224.0.1.39	0.0.0.0	---	0.0.0.0	0	0

show ip nat filter

```

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 299

[show ip mfib stats](#), on page 300

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 <i>vpn-id</i>	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
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 303

[show ip nat interface-statistics](#), on page 304

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

Nat	List information about all NAT interfaces in all VPNs.
------------	--

Table 5: Syntax Description

<i>nat-parameter</i>	Specific NAT Interface Parameter: List specific NAT interface information. <i>nat-parameter</i> 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 <i>vpn-id</i>	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
```

VPN	IFNAME	MAP TYPE	FILTER TYPE	FIB		IP	NUMBER
				FILTER COUNT	FILTER COUNT		IP POOLS
1	natpool11	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 302

[show ip nat interface-statistics](#), on page 304

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 6: Syntax Description

None	Display statistics for all interfaces in all VPNs.
nat-vpn <i>vpn-id</i>	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	NAT	NAT	NAT	NAT						
		MAP	MAP	MAP	MAP	MAP	MAP	MAP	MAP	STATE	POLICER	ICMP	ICMP	ERROR	NAT
		ADD	ADD	ADD	ADD	ADD	ADD	ADD	ADD	CHECK	DROPS	ERROR	ERROR	DROPS	FRAGMENTS
		FAIL	FAIL	FAIL	FAIL	FAIL	FAIL	FAIL	FAIL	FAIL	EXHAUSTED				
1	ge0/4	0	0	0	0	0	0	0	0	0	0	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	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 302
- [show ip nat interface](#), on page 303

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.
<i>ipv4-address</i> <i>ipv4prefix /length</i> vpn <i>vpn-id</i>	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 (<i>natpool-inside</i>) and routes learned from the service side (<i>natpool-outside</i>) for Cisco vEdge devices acting as NATs.
<i>protocol</i>	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 <i>protocol</i>]	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 <i>vpn-id</i>	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-externall1, E2 -> ospf-external2,
  N1 -> ospf-nssa-externall1, 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
```

VPN	PREFIX	PROTOCOL	SUB TYPE	IF NAME	NEXTHOP	NEXTHOP	NEXTHOP	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-externall1, E2 -> ospf-external2,
  N1 -> ospf-nssa-externall1, N2 -> ospf-nssa-external2,
  e -> bgp-external, i -> bgp-internal
Codes Status flags:
  F -> fib, S -> selected, I -> inactive,
  B -> blackhole, R -> recursive
```

VPN	PREFIX	PROTOCOL	SUB TYPE	IF NAME	ADDR	NEXTHOP	NEXTHOP	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
```

VPN	ADDRESS 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 294

[show ipv6 routes](#), on page 325

[show omp routes](#), on page 354

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.
<i>source-ip-address</i> [<i>source-port</i> [<i>destination-ip-address</i> [<i>destination-port</i>]]] [(<i>ciphersuite suite</i> <i>new-key-hash hash</i> <i>new-spi spi</i> <i>old-key-hash hash</i> <i>old-spi spi</i>)]]]	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 $8$j37xShEUPZF2zuiZFpTqQBHSlCHVX1XLut1o62mh7c=
  !
 !
 ipsec
```

show ipsec ike outbound-connections

```

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 310

[show ipsec ike sessions](#), on page 312

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.
<i>source-ip-address</i> [<i>source-port</i> [<i>destination-ip-address</i>] [<i>destination-port</i>] [<i>spi</i>]]] [(<i>ciphersuite suite</i> tunnel-mtu <i>mtu</i>)]]]	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 $8$j37xShEUP2F2zuiZFpTqqBHS1CHVX1XLut1o62mh7c=
!
!
!
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
```

show ipsec ike sessions

```

!
no shutdown
!
!

vEdge1# show ipsec ike outbound-connections

SOURCE          SOURCE  DEST          DEST  CIPHER
IP              PORT   IP            PORT  SPI   SUITE
-----
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
-----
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 309

[show ipsec ike sessions](#), on page 312

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 $8$j37xShEUP2F2zuiZFpTqgBHS1CHVX1XLut1o62mh7c=
!
!
!
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
```

VPN	NAME	VERSION	SOURCE		DEST		INITIATOR SPI	RESPONDER SPI	CIPHER SUITE	DH GROUP	STATE	UPTIME
			SOURCE IP	PORT	DEST IP	PORT						
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
```

VPN	NAME	VERSION	SOURCE		DEST		INITIATOR SPI	RESPONDER SPI	CIPHER SUITE	DH GROUP	STATE	UPTIME
			SOURCE IP	PORT	DEST IP	PORT						
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 309

[show ipsec ike outbound-connections](#), on page 310

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.
--	--

<code>tloc-address [color [(spi [(auth-key-hash [encrypt-key-hash ip port)]]]]</code>	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	
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 142
- [show ipsec inbound-connections](#), on page 313
- [show ipsec outbound-connections](#), on page 315

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 <i>string</i>	Authentication Type: Display information for the IPsec connections that use the specified authentication.

show ipsec outbound-connections

remote-tloc-address <i>ip-address</i>	TLOC Address: Display the IPsec connection information for a specific TLOC address.
remote-tloc-color <i>color</i>	TLOC Color: Display the IPsec connection information for a specific TLOC color.
tunnel-mtu <i>number</i>	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 <code>Authentication Used</code> column with the <code>Integrity Used</code> column. The values <code>null</code> , <code>ah-sha1-hmac</code> , <code>ah-no-id</code> , and <code>sha1-hmac</code> are replaced with <code>none</code> , <code>ip-udp-esp</code> , <code>ip-udp-esp-no-id</code> , and <code>esp</code> 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 SOURCE DEST DEST REMOTE REMOTE
REMOTE AUTHENTICATION NEGOTIATED
```

IP COLOR	USED	PORT KEY HASH	IP ENCRYPTION ALGORITHM	TC SPIs	PORT	SPI	TUNNEL MTU	TLOC ADDRESS	TLOC
10.1.15.15	AH_SHA1_HMAC	12406 *****f5a8	10.0.5.11 AES-GCM-256	8	12406	262	1413	172.16.255.11	lte
10.1.15.15	AH_SHA1_HMAC	12406 *****afe6	10.0.5.21 AES-GCM-256	8	12406	261	1413	172.16.255.21	lte
10.1.15.15	AH_SHA1_HMAC	12406 *****c4cc	10.1.14.14 AES-GCM-256	8	12406	262	1413	172.16.255.14	lte
10.1.15.15	AH_SHA1_HMAC	12406 *****a3dd	10.1.16.16 AES-GCM-256	8	12406	262	1413	172.16.255.16	lte

Related Topics

[rekey](#)

[show ipsec inbound-connections](#), on page 313

[show ipsec local-sa](#), on page 314

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 <i>vpn-id</i>	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
```

VPN	INTERFACE	STATE	ACQUIRED IP	SERVER	TIME	
					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 246

[show ipv6 interface](#), on page 319

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] [tlocolor 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.
<i>ipv4-prefix/length</i>	Specific Prefix: List the forwarding table entry for the specified IPv6 prefix.
tloc [color <i>color</i> tloc-ip <i>ip-address</i>]	TLOC-Specific Entries: Display forwarding table IPv6 entries for specific TLOCs.
vpn <i>vpn-id</i>	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
```

VPN	PREFIX	NEXTHOP IF NAME	NEXTHOP ADDR	NEXTHOP LABEL	SA 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 319

[show ipv6 routes](#), on page 325

[show ip fib](#), on page 294

[show omp routes](#), on page 354

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).
<i>interface-name</i>	Specific Interface: Display information about a specific interface. On Cisco vEdge devices, <i>interface-name</i> 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, <i>interface-name</i> 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
```

VPN	INTERFACE	AF	RX	TX	IPV6 ADDRESS	STATUS	IF	IF	ENCAP	PORT	TYPE	MTU	HWADDR	SPEED	DUPLEX	MSS	TCP
0	ge0/1	ipv6	2	6	2001::a00:1a0b/120	Up	Up	null	service	1500	00:0c:29:ab:b7:62	1000	full	1420			
0	ge0/2	ipv6	21	5	2001::a00:50b/120	Up	Up	null	service	1500	00:0c:29:ab:b7:6c	1000	full	1420			
0	ge0/3	ipv6	0	8	fd00:1234::/16	Up	Up	null	service	1500	00:0c:29:ab:b7:76	1000	full	1420			
0	ge0/4	ipv6	-	-	-	Up	Up	null	service	1500	00:0c:29:ab:b7:80	1000	full	1420			
0	ge0/5	ipv6	-	-	-	Down	Up	null	service	1500	00:0c:29:ab:b7:8a	1000	full	1420			
0	ge0/6	ipv6	-	-	-	Down	Up	null	service	1500	00:0c:29:ab:b7:94	1000	full	1420			
0	ge0/7	ipv6	-	-	-	Up	Up	null	service	1500	00:0c:29:ab:b7:9e	1000	full	1420			
0	system	ipv6	-	-	-	Up	Up	null	loopback	1500	00:00:00:00:00:00	10	full	1420			
0	loopback1	ipv6	0	0	2001::a00:6501/128	Up	Up	null	transport	1500	00:00:00:00:00:00	10	full	1420			
0	loopback2	ipv6	0	0	2001::a00:6502/128	Up	Up	null	transport	1500	00:00:00:00:00:00	10	full	1420			
0	loopback3	ipv6	0	0	2001::a00:6503/128	Up	Up	null	transport	1500	00:00:00:00:00:00	10	full	1420			
0	loopback4	ipv6	0	0	2001::a00:6504/128	Up	Up	null	transport	1500	00:00:00:00:00:00	10	full	1420			

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
```

VPN	INTERFACE	TCP		AF	MSS	RX	TX	LINK		IF		ENCAP	PORT	TYPE	MTU	HWADDR	SPEED		
		DUPLX	ADJUST					LOCAL	ADDRESS	ADMIN	OPER							STATUS	STATUS
0	eth1	-	-	ipv6	2001:a0:5:0:20c:29ff:fea4:333d/64	202689	163339	full	-	Up	Up	null	transport	1500	00:0c:29:a4:33:3d	1000			

Related Topics

[show interface](#), on page 267

[show ipv6 neighbor](#), on page 322

[show ipv6 routes](#), on page 325

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 <i>vpn-id</i>	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:bdf: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 187
- [show ipv6 interface](#), on page 319
- [show ipv6 routes](#), on page 325

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 404

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 405

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 406

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 403
- [show policy access-list-policers](#), on page 407

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.
<i>ipv6-address</i> <i>ipv6-prefix/length</i> <i>prefix</i> vpn <i>vpn-id</i>	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 <i>protocol</i>	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. <i>protocol</i> can be bgp , connected , omp , ospf , or static .
vpn <i>vpn-id</i>	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
```

VPN	PREFIX	PROTOCOL	SUB TYPE	IF NAME	ADDR	VPN	TLOC IP	COLOR
		PROTOCOL	NEXTHOP	NEXTHOP	NEXTHOP			

```

-----
ENCAP  STATUS
-----
0      fd00::/16      connected      -      ge0/3      -      -      -
      -      F,S

```

Related Topics[show ip routes](#), on page 305[show ipv6 interface](#), on page 319[show ipv6 neighbor](#), on page 322

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 86[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 <i>package-name</i>	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 478

show log

show log—Display the contents of system log (syslog) files.

Command Syntax

show log *filename* [**tail** *number*]

Syntax Description

<i>Filename</i>	Filename: Name of the syslog file.
tail <i>number</i>	Last Lines in the File: Display the last lines in the file. In <i>number</i> , 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//DmiA0d0JU1rOt91CMTVGkscm9wLSYQrIIs
authpriv.info: Jan 25 14:11:31 vedge sshd[31600]: pam_unix(sshd:session): session opened for user admin by (uid=0)
local11.info: Jan 25 14:11:32 vedge confd[474]: audit user: admin/99 assigned to groups: viptela-reserved-system-write-task,netadmin
local11.info: Jan 25 14:11:32 vedge confd[474]: audit user: admin/99 CLI 'startup'
local11.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
local11.info: Jan 25 14:11:38 vedge confd[47
```

Related Topics

- [file list](#), on page 80
- [file show](#), on page 80
- [logging disk](#)
- [logging server](#)
- [show crash](#), on page 243
- [show logging](#), on page 331

show logging

show logging—Display the settings for logging syslog messages.

Command Syntax

show logging [*logging-parameter*]

Syntax Description

	None: Display all logging information.
<i>logging-parameter</i>	Specific Logging Parameter: Display information for a specific logging parameter. <i>logging-parameter</i> 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 80
- [file show](#), on page 80
- [logging disk](#)
- [logging server](#)
- [show crash](#), on page 243

[show log](#), on page 330

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

<i>process-name</i>	Shows logs for one or more Cisco SD-WAN processes. You can specify a comma-separated list of processes, for example, <code>fpm</code> , <code>ftm</code> . 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 <i>path</i>	Extracts pcap data to a file.
end timestamp <i>ts</i>	Shows logs up to the specified timestamp.
module <i>name</i>	Selects logs for specific modules.
internal	Selects all logs.
start { last { <i>n</i> { days hours minutes seconds } clear boot } timestamp <i>ts</i> } [end { last { <i>n</i> { days hours minutes seconds } clear boot } timestamp <i>ts</i> }]	Shows logs collected between the specified start and end times.
level <i>level</i>	Shows logs for the specified and higher levels.
fru <i>slot</i>	Shows logs from a specific FRU.
reverse	Shows logs in reverse chronological order.
to-file <i>path</i>	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
<ul style="list-style-type: none"> • 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 <i>path</i>	Extracts pcap data to a file.
end timestamp <i>ts</i>	Shows logs up to the specified timestamp.
module <i>name</i>	Selects logs for specific modules.
internal	Selects all logs.
start { last { <i>n</i> { days hours minutes seconds } clear boot } timestamp <i>ts</i> } [end { last { <i>n</i> { days hours minutes seconds } clear boot } timestamp <i>ts</i> }]	Shows logs collected between the specified start and end times.
level <i>level</i>	Shows logs for the specified and higher levels.
fru <i>slot</i>	Shows logs from a specific FRU.
reverse	Shows logs in reverse chronological order.
to-file <i>path</i>	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 8: Supported Cisco SD-WAN Daemons*

Cisco SD-WAN Daemons	Supported from Release
<ul style="list-style-type: none"> • fpm • 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_confid_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_confid_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 <i>mmm</i> <i>hhh:mm</i> }	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 (<i>mmm</i> or <i>hh:mm</i>).
clock <i>hh:mm</i>	Displays event trace messages starting from a specific clock time in hours and minutes format (<i>hh:mm</i>).
<i>date</i>	(Optional) Day of the month.
<i>month</i>	(Optional) Displays the month of the year.
from-boot <i>seconds</i>	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 <i>vpn-id</i>	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 339
- [show multicast topology](#), on page 340
- [show multicast tunnel](#), on page 341
- [show omp multicast-routes](#), on page 349
- [show pim interface](#), on page 396
- [show pim neighbor](#), on page 397
- [show pim rp-mapping](#), on page 398
- [show pim statistics](#), on page 399

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 <i>vpn-id</i>	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
```

```

VPN  RPF ADDRESS  RPF      NEXTHOP  RPF  RPF
      RPF ADDRESS STATUS    COUNT   NBR   IF   RPF
      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 337
- [show multicast topology](#), on page 340
- [show multicast tunnel](#), on page 341
- [show omp multicast-routes](#), on page 349
- [show pim interface](#), on page 396
- [show pim neighbor](#), on page 397

[show pim rp-mapping](#), on page 398

[show pim statistics](#), on page 399

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 <i>vpn-id</i>	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
```

OIF	VPN	GROUP	SOURCE	JOIN	TYPE	FLAGS	RP ADDRESS	UPSTREAM	UPSTREAM	UPSTREAM	UP TIME	EXPIRES	INDEX	OIF	
FLAGS		OIF	TUNNEL				REPLICATOR	NEIGHBOR	STATE	INTERFACE				NAME	
-	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 299
- [show ip mfib stats](#), on page 300
- [show ip mfib summary](#), on page 301
- [show multicast replicator](#), on page 337
- [show multicast rpf](#), on page 339
- [show multicast tunnel](#), on page 341
- [show omp multicast-routes](#), on page 349
- [show pim interface](#), on page 396
- [show pim neighbor](#), on page 397
- [show pim rp-mapping](#), on page 398
- [show pim statistics](#), on page 399

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 <i>vpn-id</i>	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
```

VPN	TUNNEL ADDRESS	TUNNEL 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 337
- [show multicast rpf](#), on page 339
- [show multicast topology](#), on page 340
- [show omp multicast-routes](#), on page 349
- [show pim interface](#), on page 396
- [show pim neighbor](#), on page 397
- [show pim rp-mapping](#), on page 398
- [show pim statistics](#), on page 399

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 (<i>ccyy-mm-dd hh:mm:ss ccyy-mmT</i> h <i>h:mm:ss</i>)	Event End Time: Display notifications of events that have occurred up until the specified date and time.
to (<i>ccyy-mm-dd hh:mm:ss ccyy-mmT</i> h <i>h:mm:ss</i>)	Event Start Time: Display notifications of events that have occurred up until the specified date and time.
to <i>number</i>	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 80

[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 345

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.
<i>parameter</i>	Specific Parameter: Display information about a specific NTP parameter. <i>parameter</i> can be one of the following: delay , jitter , offset , poll , reach , refif , remote , st , type , and when .
<i>index</i>	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 344

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
```

VPN	ORIGINATOR	APP ID	APP TYPE	SUBAPP 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
```

VPN	ORIGINATOR	APP 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 221
- [show cloudexpress gateway-exits](#), on page 222
- [show cloudexpress local-exits](#), on page 223

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 <i>[destination-peer-address]</i>	Advertised Multicast Sources: List the multicast sources advertised.
detail	Detailed Information: List detailed information.
family ipv4 entries received <i>source-peer-address</i> [loss-reason <i>reason</i> status <i>status</i>]	Received Multicast Sources List the multicast sources received. Include the loss-reason option to list specific reasons for losses of multicast sources. <i>reason</i> 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. <i>status</i> 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 349

[show multicast topology](#), on page 340

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
FAMILY  TYPE  VPN  SOURCE 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 347

[show multicast topology](#), on page 340

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.
<i>ip-address</i>	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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> 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
```

```

PEER          TYPE      DOMAIN  SITE  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

```

PEER	TYPE	DOMAIN ID	SITE 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

```

PEER	TYPE	DOMAIN ID	SITE 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
```

PEER	TYPE	DOMAIN ID	OVERLAY ID	SITE ID	REGION 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 229
- [show omp routes](#), on page 354
- [show omp services](#), on page 359
- [show omp summary](#), on page 361
- [show omp tlocs](#), on page 364

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.
<i>ipv4 prefix</i>	Displays the route prefix. Lists OMP route information for the specified route prefix.
<i>IP</i>	Displays IP address of the specific route. Lists OMP IP address for the specific route.
<i>length</i>	Displays the route length.
detail	Detailed information: Lists detailed route information about OMP peering sessions on the local device.
family <i>family address</i>	Family: Lists OMP route information for the specified IP family. <i>family address</i> can be <i>ipv4</i> or <i>ipv6</i> .
vpn <i>vpn-id</i>	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 229
- [show omp peers](#), on page 350
- [show omp services](#), on page 359
- [show omp summary](#), on page 361
- [show omp tlocs](#), on page 364

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 <i>ip-address</i>	Service Originator: List the services learned from a specific OMP peer.
service <i>service-name</i>	Specific Service: List information about the specific service.
vpn <i>vpn-id</i>	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

VPN SERVICE ORIGINATOR FROM PEER PATH
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 229

[show omp peers](#), on page 350

[show omp routes](#), on page 354

[show omp summary](#), on page 361

[show omp tlocs](#), on page 364

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
<i>parameter-name</i>	Information about a Specific Parameter: Display configuration information about a specific OMP peering session parameter. <i>parameter-name</i> 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 229
- [show omp peers](#), on page 350
- [show omp routes](#), on page 354
- [show omp services](#), on page 359
- [show omp tlocs](#), on page 364

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 <i>ip-address</i>	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 229
- [show omp peers](#), on page 350
- [show omp routes](#), on page 354
- [show omp services](#), on page 359
- [show omp summary](#), on page 361

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	<p>vpn Lists the Overlay Management Protocol (OMP) routes for the specified VPN.</p> <p><i>vpn-id</i> Specifies the VPN ID to be verified.</p> <p><i>prefix/length</i> Specifies route prefix and length.</p> <p>Lists OMP route information for the specified route prefix.</p>				
Command Default	This command has no default behavior.				
Command Modes	Privileged EXEC (#)				
Command History	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>Cisco SD-WAN Release 20.8.1</td> <td>This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	Cisco SD-WAN Release 20.8.1	This command was introduced.
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
```

STATUS	PATH		ATTRIBUTE								
	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 9: 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 [<i>site-id</i>]	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 column, 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	SITE	DOMAIN	PEER	PEER	PEER	PEER	PEER	PEER
TYPE	PROTOCOL	SYSTEM IP	ID	ID	PRIVATE IP	PRIVATE	PEER	PUBLIC	PUBLIC	REMOTE COLOR
STATE		UPTIME				PORT	PUBLIC IP	PORT		
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 229
- [show orchestrator local-properties](#), on page 375
- [show orchestrator statistics](#), on page 377

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.
<i>connection-parameter</i>	Specific Connection Parameter: List the connection history only for those items match the connection parameter. <i>connection-parameter</i> 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.
<i>index</i>	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: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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
```

show orchestrator connections-history

```

BIDNTPR - Board ID not initialized
BIDNTVRFD - Peer board ID certificate not verified
CRTREJSESR - Challenge response rejected by peer
CRTVERFL - Fail to verify peer certificate
CTORGNMMIS - Certificate organization name mismatch
DCONFAIL - DTLS connection failure
DEVALC - Device memory allocation failures
DHSTMO - DTLS handshake timeout
DISCVBD - Disconnect vBond after register reply
DISTLOC - TLLOC disabled
DUPSER - Duplicate serial number
IP_TOS - Socket options failure
LISFD - Listener socket FD error
MEMALCFL - Memory allocation failure
NOACTVB - No active vBond found to connect to
NOERR - No error
NOSLPRCRT - Unable to get peer's certificate

RMGSPR - Remove global saved peer
RXTRDWN - Received teardown
RDSIGFBD - Read signature from board ID failed
SSLNFAIL - Failure to create new SSL context
SERNTPRES - Serial number not present
TMRALC - Memory failure
TUNALC - Memory failure
UNMSGBDRG - Unknown message type or bad register message
UNAUTHHEL - Recd hello from unauthenticated peer
VBDEST - vDaemon process terminated
VECRETREV - vEdge certification revoked
VSCRTREV - vSmart certificate revoked
VB_TMO - Peer vBond timed out
VM_TMO - Peer vManage timed out
VP_TMO - Peer vEdge timed out
VS_TMO - Peer vSmart timed out
XTVSTRDN - Extra vSmart teardown

```

PEER	PEER	PEER	SITE	DOMAIN	PEER	PRIVATE	PEER	PEER	PEER	PEER
LAST	PROTOCOL	SYSTEM IP	ID	WHEN	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						

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 229

[show orchestrator local-properties](#), on page 375

[show orchestrator statistics](#), on page 377

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

	<p>None:</p> <p>Display the basic vBond configuration parameters.</p>
<i>parameter</i>	<p>Information about a Specific Parameter:</p> <p>Display configuration information about a specific parameter. <i>parameter</i> 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.</p>

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

INDEX  IP                PORT  VSMARTS  VMANAGES  ADMIN  OPERATION
-----
0      10.1.14.14         12346 4         1         up     up
```

Related Topics

- [show control local-properties](#), on page 235
- [show orchestrator connections](#), on page 370
- [show system status](#), on page 461

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
```

UUID	PRIVATE IP	PRIVATE PORT	PROXY IP	PROXY 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 212
- [show control connections](#), on page 229
- [show control local-properties](#), on page 235

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.
<i>counter-name</i>	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 370

[show orchestrator local-properties](#), on page 375

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.
<i>instance</i>	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**

```

INSTANCE      VMANAGE  VSMART  VEDGE      LISTENING  LISTENING  LISTENING
COUNTS      COUNTS  COUNTS  PROTOCOL   IP         IPV6       PORT
-----
0             2       4       0          dtls      10.1.14.14  ::        12346

```

Related Topics

[show control summary](#), on page 241

[show orchestrator connections](#), on page 370

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 242
- [show control valid-vsmarts](#), on page 243
- [show orchestrator connections](#), on page 370
- [show orchestrator valid-vmanage-id](#), on page 380
- [show orchestrator valid-vsmarts](#), on page 381

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.
<i>serial-number</i>	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 242
- [show control valid-vsmarts](#), on page 243
- [show orchestrator connections](#), on page 370
- [show orchestrator valid-vedges](#), on page 380
- [show orchestrator valid-vsmarts](#), on page 381

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.
<i>serial-number</i>	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 242
- [show control valid-vsmarts](#), on page 243
- [show orchestrator connections](#), on page 370
- [show orchestrator valid-vedges](#), on page 380
- [show orchestrator valid-vmanage-id](#), on page 380
- [show orchestrator valid-vsmarts](#), on page 381

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.
<i>ospf-parameter</i>	Specific OSPF Property: List information about a specific OSPF property. <i>ospf-property</i> 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

```

VPN	AREA	LSA TYPE	LINK ID	ADVERTISING 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 384
- [show ospf interface](#), on page 385
- [show ospf neighbor](#), on page 387
- [show ospf process](#), on page 388
- [show ospf routes](#), on page 390

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.
<i>ospf-lsa</i>	Specific OSPF LSA Type: List information about a specific OSPF LSA. <i>ospf-lsa</i> can be one of the following: as-external-lsa , network-lsa , nssa-lsa , router-lsa , summary-lsa , and total-lsa .

vpn <i>vpn-id</i>	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
```

VPN	AREA	ROUTER LSA	NETWORK LSA	SUMMARY LSA	AS EXTERNAL LSA	NSSA LSA	TOTAL LSA
0	51	6	4	0	0	0	10

Related Topics

- [show ospf database](#), on page 382
- [show ospf interface](#), on page 385
- [show ospf neighbor](#), on page 387
- [show ospf process](#), on page 388
- [show ospf routes](#), on page 390

show ospf interface

show ospf interface—Display information about interfaces that are running OSPF (on Cisco 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 <i>interface-name</i>	OSPF Interface: Display interface-specific OSPF information.

vpn <i>vpn-id ip-address</i> [<i>interface-index</i> [<i>ospf-property</i>]]	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. <i>ospf-property</i> can be one of the fields in the show ospf interface command output.
vpn <i>vpn-id</i>	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 382
- [show ospf database-summary](#), on page 384
- [show ospf neighbor](#), on page 387
- [show ospf routes](#), on page 390

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 <i>vpn-id</i> <i>ip-address</i> [<i>ospf-property</i>]	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 <i>vpn-id</i>	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 382
- [show ospf database-summary](#), on page 384
- [show ospf interface](#), on page 385
- [show ospf process](#), on page 388
- [show ospf routes](#), on page 390

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 <i>area-id</i> [<i>ospf-property</i>]	Specific OSPF Property: List information about a specific OSPF property. <i>ospf-property</i> can be one of the fields in the show ospf process command output, shown below.

vpn <i>vpn-id</i>	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 382
- [show ospf database-summary](#), on page 384
- [show ospf interface](#), on page 385
- [show ospf neighbor](#), on page 387
- [show ospf routes](#), on page 390

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	<i>prefix/length prefix</i> 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	<i>route-type [prefix/length]</i> 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	<i>vpn vpn- id</i> 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**

VPN	ROUTE TYPE	PREFIX	ID	AREA	COST	PATH TYPE	DEST TYPE	NEXT HOP	IF 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**

VPN	ROUTE TYPE	IF NAME	PREFIX	ID	AREA	COST	FLAGS	PATH TYPE	DEST TYPE	TAG	COST
0	router	172.16.255.13/32	10.0.5.13 ge0/2	0	51	10	2	intra-area	router	-	-
0	network	10.0.5.0/24	0.0.0.0 ge0/2	0	51	10	0	intra-area	network	-	-
0	network	10.0.12.0/24	10.0.5.13 ge0/2	0	51	20	0	intra-area	network	-	-
0	network	10.1.14.0/24	10.0.5.13 ge0/2	0	51	20	0	intra-area	network	-	-
0	network	10.1.15.0/24	10.0.5.13 ge0/2	0	51	20	0	intra-area	network	-	-
0	network	10.1.16.0/24	10.0.5.13 ge0/2	0	51	20	0	intra-area	network	-	-
1	router	172.16.255.12/32	10.2.2.12 ge0/0	0	0	10	2	intra-area	router	-	-
1	router	172.16.255.21/32	10.2.2.12 ge0/0	0	0	20	2	intra-area	router	-	-
1	network	10.2.2.0/24	0.0.0.0 ge0/0	0	0	10	0	intra-area	network	-	-
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 305
- [show ospf database](#), on page 382
- [show ospf database-summary](#), on page 384
- [show ospf interface](#), on page 385
- [show ospf neighbor](#), on page 387
- [show ospf process](#), on page 388

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 <i>interface-name</i>	(Optional) Name of the interface.
packets-captured <i>packets</i>	(Optional) Number of packets.
session-id <i>session-id</i>	(Optional) Session ID.
vpn <i>vpn-id</i>	(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 <i>trace-id</i>	(Optional)	Displays packet trace details for the specified trace ID.
statistics	(Optional)	Displays packet trace statistics for the parameter specified.
<i>trace-id</i>	(Optional)	Displays packet statistics for the specified trace-id. Range: 0 to 1023.
decision <i>string</i>	(Optional)	Displays packet drop/forward information.
destination-ip <i>ip-address</i>	(Optional)	Displays packet trace statistics for the specified destination IPv4 address.
destination-interface <i>interface</i>	(Optional)	Displays statistics for the specified destination-interface.
destination-port <i>port</i>	(Optional)	Displays packet trace statistics for the specified destination port. Range: 0 to 65535.
duration <i>seconds</i>	(Optional)	Displays packet trace statistics for the specified duration in μsecs.
source-interface <i>interface</i>	(Optional)	Displays packet trace statistics for the specified source interface.
source-ip <i>ip-address</i>	(Optional)	Displays packet trace statistics for the specified source IPv4 address.
source-port <i>port</i>	(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.

show packet-trace

```
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
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
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
-----
ID      SOURCE IP      SOURCE PORT  DESTINATION IP      DESTINATION PORT  SOURCE INTERFACE  DESTINATION 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	<i>command-name</i> 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 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

Note	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
```

VPN	IF NAME	IF ADDR	NEIGHBOR COUNT	HELLO INTERVAL	PRIORITY	DR ADDRESS	JOIN PRUNE 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 337
- [show multicast rpf](#), on page 339
- [show multicast topology](#), on page 340
- [show multicast tunnel](#), on page 341
- [show omp multicast-routes](#), on page 349
- [show pim neighbor](#), on page 397
- [show pim rp-mapping](#), on page 398
- [show pim statistics](#), on page 399

show pim neighbor

List PIM neighbors (on vEdge routers only).

show pim neighbor [**vpn** *vpn-id*]

Syntax Description

Nbr	List standard information about PIM neighbors.
VPN-Specific Neighbors	vpn <i>vpn-id</i> 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
```

VPN	IF NAME	NBR ADDR	UP TIME	EXPIRES	PRIORITY	HOLD 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 337
- [show multicast rpf](#), on page 339
- [show multicast topology](#), on page 340
- [show multicast tunnel](#), on page 341
- [show omp multicast-routes](#), on page 349
- [show pim interface](#), on page 396
- [clear pim protocol](#), on page 52
- [show pim rp-mapping](#), on page 398
- [show pim statistics](#), on page 399

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 <i>vpn-id</i> 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 337
- [show multicast rpf](#), on page 339
- [show multicast topology](#), on page 340
- [show multicast tunnel](#), on page 341
- [show omp multicast-routes](#), on page 349
- [show pim interface](#), on page 396
- [show pim neighbor](#), on page 397
- [show pim statistics](#), on page 399

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	<i>parameter</i> Display the counters for a single PIM counter. <i>parameter</i> 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 337
- [show multicast rpf](#), on page 339
- [show multicast topology](#), on page 340
- [show multicast tunnel](#), on page 341

[show omp multicast-routes](#), on page 349

[show pim interface](#), on page 396

[show pim neighbor](#), on page 397

[show pim rp-mapping](#), on page 398

show platform resources

Table 10: 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

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)
  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)
  Control Processor      3.05%                100%              80%                90%                H
  DRAM                   1037MB (13%)         7861MB            88%                93%                H
QFP
  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
SIPO
  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	
<i>process</i>	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'.
<i>slot</i>	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 11: Supported Cisco SD-WAN Daemons

Cisco SD-WAN Daemons	Supported from Release
<ul style="list-style-type: none"> • 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 <i>bytes</i> Display information about policers that match the specified burst size. <i>Range</i> : 0 through $2^{64} - 1$ bytes
Specific Out-of-Specification Action	oos-action <i>action</i> 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. <i>Action</i> : drop , remark
Specific Out-of-Specification Packet Count	oos-pkts <i>number</i> Display information about policers that match the specified OOS packet count. <i>Range</i> : 0 through $2^{64} - 1$
Specific Bandwidth	rate <i>bps</i> Display information about policers that match the specified bandwidth. <i>Range</i> : 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
```

NAME	INDEX	DIRECTION	RATE	BURST	OOS ACTION	OOS PKTS
ge0_0_11q	10	out	200000000000	15000	drop	0
ge0_3_11q	11	out	200000000000	15000	drop	0

Related Topics

[clear policer statistics](#), on page 55

[show policy data-policy-filter](#), on page 408

[show policy from-vsmart](#), on page 411

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	<i>access-list-name</i> 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
```

NAME	INTERFACE NAME	INTERFACE DIRECTION
ALLOW_OSPF_PACKETS	ge0/0	in

Related Topics

[access-list](#)

[show ipv6 policy access-list-associations](#), on page 322

[show policy access-list-counters](#), on page 405

[show policy access-list-names](#), on page 406

[show policy access-list-policers](#), on page 407

[show policy data-policy-filter](#), on page 408

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	<i>access-list-name</i> 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 323
- [show policy access-list-associations](#), on page 404
- [show policy access-list-names](#), on page 406
- [show policy access-list-policers](#), on page 407
- [show policy data-policy-filter](#), on page 408

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 324
- [show policy access-list-associations](#), on page 404
- [show policy access-list-counters](#), on page 405
- [show policy access-list-policers](#), on page 407
- [show policy data-policy-filter](#), on page 408

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 325
- [show policer](#), on page 403

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 Bytes) 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**

NAME	NAME	COUNTER NAME	PACKETS	BYTES	POLICER NAME	OOS PACKETS	OOS 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**

NAME	NAME	COUNTER NAME	PACKETS	BYTES	POLICER NAME	OOS PACKETS	OOS BYTES
dp1	vpn_1_list	police_count	0	0			
		police_count20	0	0	10.police	0	
					20.police	0	
dp2	vpn_1_list				30.police	0	
					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

```

show policy ef-stats

```

exceed remark
from-vsmart lists vpn-list vpn_1_list
vpn 1

```

```
vEdge# show policy data-policy-filter
```

NAME	NAME	COUNTER NAME	PACKETS	BYTES	POLICER NAME	OOS PACKETS	OOS BYTES
dpl	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 325
- [show policer](#), on page 403
- [show policy from-vsmart](#), on page 411

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
```

CORE NUM	ADD SUPER BLOCK	DEL SUPER BLOCK	CUR SUPER BLOCK	ADD SUPER BLOCK FAILED	ADD FLOW	DEL FLOW	CUR FLOW	SCAN COUNTER	EF NUM	CUSTOM MATCH	HASH COLLISION	CUR CPU 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 12: 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 <i>template-option</i>	cflowd Templates: Display only the cflowd template information that that vSmart controller has pushed to the vEdge router. <i>template-option</i> 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 169

[show policy data-policy-filter](#), on page 408

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.
[<i>map-name</i>]	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 414

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.
<i>scheduler-name</i>	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 413

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 <i>ip-address</i> dest-port <i>port-number</i>	Destination IP Address and Port Number: IP address and port number of the remote end of the IPsec tunnel.
app <i>application-name</i>	DPI Application: Display the packets associated with the specified DPI application.
dscp <i>value</i>	DSCP Value: DSCP value being used on the IPsec tunnel. <i>Range:</i> 0 through 63
interface <i>interface-name</i>	Interface: Name of the local interface being used for the IPsec tunnel.
protocol <i>number</i>	Protocol: Number of the protocol being used on the IPsec tunnel.
source-ip <i>ip-address</i> source-port <i>port-number</i>	Source IP Address and Port Number: IP address and port number of the local end of the IPsec tunnel.
vpn-id <i>vpn-id</i>	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 184
- [show app-route stats](#), on page 185
- [show ip fib](#), on page 294
- [show ip routes](#), on page 305
- [show policy tunnel-path](#), on page 416

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 <i>ip-address</i> dest-port <i>port-number</i>	Destination IP Address and Port Number: IP address and port number of the remote end of the IPsec tunnel.
app <i>application-name</i>	DPI Application: Display the packets associated with the specified DPI application.
dscp <i>value</i>	DSCP Value: DSCP value being used on the IPsec tunnel.
interface <i>interface-name</i>	Interface: Name of the local interface being used for the IPsec tunnel.
protocol <i>number</i>	Protocol: Number of the protocol being used on the IPsec tunnel.
source-ip <i>ip-address</i> source-port <i>port-number</i>	Source IP Address and Port Number: IP address and port number of the local end of the IPsec tunnel.
vpn-id <i>vpn-id</i>	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 185
- [show app-route sla-class](#), on page 184
- [show policy service-path](#), on page 415

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 13: 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: <ol style="list-style-type: none"> 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: <ol style="list-style-type: none"> 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: <ol style="list-style-type: none"> 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 <ol style="list-style-type: none"> 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, <ul style="list-style-type: none"> • 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 NAME	PAIR	SOURCE IP ADDRESS	DESTINATION IP ADDRESS	SOURCE PORT	DESTINATION PORT	PROTOCOL	SOURCE VPN	DESTINATION VPN	IDLE TIMEOUT	OUTBOUND PACKETS	OUTBOUND OCTETS	INBOUND PACKETS	INBOUND OCTETS	FILTER STATE
zpl	1	10.20.24.17	10.20.25.18	44061	5001	TCP	1	1	0:00:59:59	12552	17581337	6853	463590	established
zpl	1	10.20.24.17	10.20.25.18	44062	5001	TCP	1	1	0:01:00:00	10151	14217536	5561	375290	established
zpl	1	10.20.24.17	10.20.25.18	44063	5001	TCP	1	1	0:00:59:59	7996	11198381	4262	285596	established
zpl	1	10.20.24.17	10.20.25.18	44064	5001	TCP	1	1	0:00:59:59	7066	9895451	3826	257392	established
zpl	1	10.20.24.17	10.20.25.18	44065	5001	TCP	1	1	0:00:59:59	13471	18868856	7440	504408	established
zpl	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
```

VPN	IFNAME	PPPOE INTERFACE	INTERFACE IP	GATEWAY IP	PRIMARY DNS	SECONDARY DNS	AUTH 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](#), on page 423

[show pppoe statistics](#), on page 423

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
VPN  IFNAME  ID      SERVER MAC      LOCAL MAC      PPP      AC NAME      SERVICE
-----
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 422

[show pppoe statistics](#), on page 423

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 423
- [show ppp interface](#), on page 422

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 95

[show system status](#), on page 461

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.
<i>configuration-hierarchy</i>	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$aBpPQpk13h.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 zonebfdwp

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
INDEX  TOTAL  AVERAGE  AVERAGE  TX DATA  RX DATA
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
INDEX  TOTAL  AVERAGE  AVERAGE  TX DATA  RX DATA
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 442

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 | tcptopt 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
tcptopt 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 tcptopt 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 threshold: 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 <i>flow-id</i>	Filters flows by flow-id

server-ip <i>server-ip</i>	Filters flows by the server IP address
client-ip <i>client-ip</i>	Filters flows by the client IP address
server-port <i>port-number</i>	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

```

show sdwan appqoe flow vpn-id

```

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	<i>vpn-id</i>	VPN/VRF ID. Range: 1 to 64
client-ip	<i>client-ip</i>	Filters flows by the client IP address
server-ip	<i>server-ip</i>	Filters flows by the server IP address
server-port	<i>port-number</i>	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
```

NAME	NAME	COUNTER NAME	PACKETS	BYTES	POLICER NAME	OOS PACKETS	OOS 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 428

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 <i>vpn-id</i>	Identifies the service VPN.
interface <i>interface-name</i>	Specifies the name of the local interface being used for the IPsec tunnel.
source-ip <i>ip-address</i>	Specifies the source IP address number of the local end of the IPsec tunnel.
dest-ip <i>ip-address</i>	Specifies the destination IP address of the remote end of the IPsec tunnel.
protocol <i>number</i>	Specifies the number of the protocol being used on the IPsec tunnel.
source-port <i>port-number</i>	Specifies the port number of the local end of the IPsec tunnel.
dest-port <i>port-number</i>	Specifies the port number of the remote end of the IPsec tunnel.
all	Displays all possible paths for a packet.
app <i>application-name</i>	Displays the packets associated with the specified DPI application.
dscp <i>value</i>	Specifies the DSCP value being used on the IPsec tunnel. <i>Range</i> : 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 <i>vpn-id</i>	Identifies the service VPN.
interface <i>interface-name</i>	Specifies the name of the local interface being used for the IPsec tunnel.
source-ip <i>ip-address</i>	Specifies the source IP address number of the local end of the IPsec tunnel.
dest-ip <i>ip-address</i>	Specifies the destination IP address of the remote end of the IPsec tunnel.
protocol <i>number</i>	Specifies the number of the protocol being used on the IPsec tunnel.
source-port <i>port-number</i>	Specifies the port number of the local end of the IPsec tunnel.
dest-port <i>port-number</i>	Specifies the port number of the remote end of the IPsec tunnel.
all	Displays all possible paths for a packet.
app <i>application-name</i>	Displays the packets associated with the specified DPI application.
dscp <i>value</i>	Specifies the DSCP value being used on the IPsec tunnel. <i>Range</i> : 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, <code>security-info integrity-type</code> .

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.
<i>image-name</i>	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 146
- [request software remove](#), on page 146
- [request software reset](#), on page 147
- [show version](#), on page 478

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>
  </vpn-list>
  <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>
</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 283
- [show interface statistics](#), on page 292
- [show system statistics](#), on page 456

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	This command was introduced.
Cisco vManage Release 20.3.1	

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 (10.0.0.16) 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

no	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_nhops : 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 179
- [show app log flows](#), on page 180
- [show system buffer-pool-status](#), on page 452
- [show tunnel statistics](#), on page 474

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
```

show system status

```

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 424
- [show uptime](#), on page 476
- [show version](#), on page 478

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.

Cisco IOS-XE software, Copyright (c) 2005-2019 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	[<i>vSmart-serial-number</i>] (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	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>Cisco SD-WAN Release 20.4.1</td> <td>Command introduced.</td> </tr> </tbody> </table>	Release	Modification	Cisco SD-WAN Release 20.4.1	Command introduced.
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	<i>tenant-name</i> Specify the name of a tenant assigned to the multitenant Cisco vSmart Controller.
	<i>peer-ip-address</i> (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
```

PEER	TYPE	DOMAIN ID	OVERLAY ID	SITE 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	
<i>tenant-name</i>	Specify the name of a tenant assigned to the multitenant Cisco vSmart Controller.
<i>prefix</i>	(Optional) Lists OMP route information for the specified route prefix.
<i>ip-address</i>	(Optional) Displays IP address of specific route.
family <i>family-address</i>	Lists OMP route information for the specified IP family. <i>family-address</i> can be ipv4 or ipv6 .

vpn <i>vpn-id</i>	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 [<i>tenant-name</i>][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 ORG NAME	TENANT ID	TENANT 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 [<i>index</i>]	Connection History and Index: Display the complete connection history or the connection history of a specific indexed item.
state <i>state</i>	Connection State: Display connections with the specified state. <i>state</i> can be up or down .
<i>ip-address</i>	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.
<i>vpn-id</i>	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
```

```

      IF      REMOTE  REMOTE
VPN  NAME  SOURCE IP  DEST IP      ADMIN  OPER   KA      TX      RX      TX      RX      TX      RX
-----  -----  -----  -----  -----  -----  -----  -----  -----  -----  -----  -----  -----
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 267[show tunnel statistics](#), on page 474[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.
<i>local-tloc-address</i> [<i>local-color</i> [<i>remote-tloc-address</i> [<i>remote-color</i> [(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 473

[show ipsec outbound-connections](#), on page 315

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.
<i>tloc-address</i> [<i>color</i> [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
```

TLOC ADDRESS	TLOC COLOR	SPI	SOURCE IP	SOURCE PORT	KEY HASH
172.16.255.15	lte	260	10.1.15.15	12346	*****0979

Related Topics

- [rekey](#)
- [request security ipsec-rekey](#), on page 142
- [show tunnel inbound-connections](#), on page 473
- [show ipsec outbound-connections](#), on page 315

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 <i>ip-address</i> dest-port <i>port-number</i>	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 <i>ip-address</i> source-port <i>port-number</i>	Source IP Address or Port: Display statistics for the specified source address or source port number.
tunnel-protocol (<i>gre</i> <i>ipsec</i>)	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
```

TUNNEL PROTOCOL	SOURCE IP	DEST IP	SOURCE PORT	DEST PORT	SYSTEM IP	LOCAL COLOR	REMOTE COLOR	TUNNEL MTU	tx-pkts	tx-octets	rx-pkts	rx-octets	TCP MSS 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
```

TUNNEL PROTOCOL	SOURCE IP	DEST IP	SOURCE PORT	DEST PORT	BFD ECHO TX PKTS	BFD ECHO RX PKTS	BFD ECHO TX OCTETS	BFD ECHO RX OCTETS	BFD PMTU PKTS	BFD PMTU PKTS	BFD PMTU OCTETS	BFD PMTU 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 267
- [show system statistics](#), on page 456
- [show tunnel gre-keepalives](#), on page 472

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.


```
-----
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 97

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 144

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 <i>interface-name</i>	Interface: Display VRRP information for a specific interface.
vpn <i>vpn-id</i>	VPN: Refresh the dynamic ARP cache entries for the specific VPN.

groups <i>group-number</i>	VRRP Group: Display information for a specific VRRP group.
groups <i>group-number</i> <i>vrrp-parameter</i>	VRRP Parameter: Display information about a specific VRRP parameter in a VRRP group. <i>vrrp-parameter</i> can be one of the following, which correspond to the header fields in the show vrrp output: <ul style="list-style-type: none"> • advertisement-timer [<i>number</i>] • last-state-change-time [<i>ccyy-mm-ddthh:mm:ss</i>] • master-down-timer [<i>number</i>] • omp-state [down up] • prefix-list-state [resolved unresolved] • priority [<i>number</i>] • track-prefix-list [<i>prefix-list-name</i>] • virtual-ip [<i>ip-address</i>] • virtual-mac [<i>mac-address</i>] • vrrp-state [backup init master]

Command History

Release	Modification
14.1	Command introduced.

Related Topics

[show interface](#), on page 267
[vrrp](#)

show wlan clients

Display information about the clients on the wireless WAN (on vEdge routers only).

show wlan clients [*vap-number*]

Syntax Description

<i>vap-number</i>	Specific VAP: Display information about the clients connected to a specific virtual access point.
-------------------	---

Command History

Release	Modification
16.3	Command introduced.

Example

Example

Display information about all clients connected to all VAPs on the WLAN:

```
vEdge# show wlan clients
```

VAP	CLIENT ID	MAC	MODE	BAND	CHANNEL	CHANNEL BANDWIDTH	DATA SECURITY	RX RATE	RSSI	ASSOC 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 267

[show wlan interfaces](#), on page 480

[show wlan radios](#), on page 481

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.
<i>vap-id</i>	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
VAP  SSID          BSSID          DATA SECURITY  MGMT SECURITY  BAND  MODE  ADMIN STATUS  OPER STATUS  NUM CLIENTS
-----
vap0  tb31_pm6_5ghz_vap0  80:b7:09:08:b7:6a  none           none        5 GHz  802.11ac  Up    Up    0
vap1  tb31_pm6_5ghz_vap1  80:b7:09:08:b7:6b  wpa/wpa2-enterprise  none        5 GHz  802.11ac  Up    Up    0
vap2  tb31_pm6_5ghz_vap2  80:b7:09:08:b7:6c  wpa/wpa2-personal  optional    5 GHz  802.11ac  Up    Up    8
vap3  tb31_pm6_5ghz_vap3  80:b7:09:08:b7:6d  wpa2-enterprise   optional    5 GHz  802.11ac  Up    Up    0

vEdge# show wlan interfaces detail
VAP  SSID          BSSID          DATA SECURITY  MGMT SECURITY  BAND  MODE  DESCRIPTION  BIT RATE  TX POWER  MAX CLIENTS  ADMIN STATUS  OPER STATUS  NUM CLIENTS
-----
vap0  tb31_pm6_5ghz_vap0  80:b7:09:08:b7:6a  none           none        5 GHz  802.11ac  -            1300 25    50           Up           Up           0
vap1  tb31_pm6_5ghz_vap1  80:b7:09:08:b7:6b  wpa/wpa2-enterprise  none        5 GHz  802.11ac  -            1300 25    20           Up           Up           0
vap2  tb31_pm6_5ghz_vap2  80:b7:09:08:b7:6c  wpa2-personal  optional    5 GHz  802.11ac  -            1300 25    24           Up           Up           8
vap3  tb31_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
VAP  SSID  BSSID          DATA SECURITY  MGMT SECURITY  BAND  MODE  ADMIN STATUS  OPER STATUS  NUM 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 267

[show wlan clients](#), on page 479

[show wlan radios](#), on page 481

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.
<i>radio-name</i> [<i>parameter</i>]	Specific Radio: Display information about a specific radio and about a specific radio parameter. <i>parameter</i> 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 NAME	MODE	BAND	MAC	COUNTRY	CHANNEL	CHANNEL BANDWIDTH	FREQUENCY	GUARD 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 267
- [show wlan clients](#), on page 479
- [show wlan interfaces](#), on page 480

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

<i>tag</i>	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 267
[show wlan clients](#), on page 479
[show wlan interfaces](#), on page 480
[show wlan radios](#), on page 481

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 <i>number</i> organization-name <i>name</i> root-cert-path <i>path</i> validity (valid invalid) vbond-ip <i>ip-address</i> vbond-port <i>number</i>	Chassis Information: List the entries corresponding to the specific chassis-related information.
<i>row-index</i>	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
```

INDEX	CHASSIS NUMBER	SERIAL NUMBER	VALIDITY	VBOND IP	VBOND PORT	ORGANIZATION NAME	ROOT CERT PATH
1	12345	6789	valid	10.1.14.1	12345	viptela	

Related Topics

[request device](#), on page 108

[request device-upload](#), on page 109

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 <i>interface-name</i>	Interface to Watch: Name of the interface on which to perform a TCP dump.
options " <i>unix-options</i> "	Options: One or more of the UNIX tcpdump command options, from among the following: [-A <i>AbdDefhHIJKILnNOpqStuUv</i>] [-B <i>size</i>] [-c <i>count</i>] [-E <i>algorithm:secret</i>] [-j <i>timestamp-type</i>] [-M <i>secret</i>] [-T <i>type</i>] [-y <i>data-link-type</i>] [<i>expression</i>] You must enclose <i>unix-options</i> in quotation marks. For an explanation of the options, see http://www.tcpdump.org/tcpdump_man.html .
vpn <i>vpn-id</i>	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
```

test policy match control-policy

```

^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

<i>policy</i>	Name of a policy.
<i>name</i>	

<i>input variable</i>	<p>The following are the input variables used to search for policies:</p> <ul style="list-style-type: none"> • 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 14: 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 220

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 305

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 help
USAGE:
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 495
- [tools ss](#), on page 498

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 <i>options</i>	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 <i>options</i>	Command Options: See the Example Output below for a list of all the tools netstat command options.
vpn <i>vpn-id</i>	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 namespace
  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  gel_7
127.1.1.0        0.0.0.0         255.255.255.0  U           0  0        0  loop0
127.1.1.1        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 495
- [tools ss](#), on page 498

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 <i>options</i>	Command Options: See the Example Output below for a list of all the tools nping command options.
<i>hostname</i> <i>ip-address</i>	Host To Check Connectivity To: Name or IP address of host to check connectivity to.
vpn <i>vpn-id</i>	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 namespace
  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 493
- [traceroute](#), on page 503

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 <i>options</i>	Command Options: See the Example Output below for a list of all the tools netstat command options.
vpn <i>vpn-id</i>	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 493

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 <i>options</i>	Command Options: See the Example Output below for a list of all the tools stun-client command options.
server (<i>domain-name</i> <i>ip-address</i>) [port <i>port-number</i>]	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 <i>vpn-id</i>	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.1.google.com 19302"
stunclient --mode basic stun.1.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.1.google.com 19302"
stunclient --mode full stun.1.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.1.google.com 19302"
stunclient --mode full --localport 12346 stun.1.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 <i>interface-name</i>	Interface: Interface through which traceroute probe should send packets.
(<i>hostname</i> <i>ip-address</i>)	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. <i>option</i> can be one or more of the following. Enclose the options in quotation marks (" "). <ul style="list-style-type: none"> • -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") <i>interface-name</i>: 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 **tracert** 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# tracert vpn 1 192.168.111.30
Traceroute in vpn 1
tracert 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# tracert host 10.2.3.12 size 1000 vpn 1 options "-q1 -w1 -m5"
Traceroute -q1 -w1 -m5 10.2.3.12 in VPN 1
tracert 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 267

[show ipv6 interface](#), on page 319
[tools nping](#), on page 495

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 95
[request execute](#), on page 111

