



Network Diagnostics and Configuration Commands

- [ping](#), on page 2
- [flowctl](#), on page 3
- [route](#), on page 6
- [ssh](#), on page 7
- [tcpdump](#), on page 8
- [ip address](#), on page 9
- [iptables](#), on page 10
- [nslookup](#), on page 11
- [ntpq](#), on page 12

ping

Use the **ping** command to check if a host is reachable.

ping [*options*] [*destination*]

This example checks if the host 1.1.1.1 is reachable:

```
root@center100:~# ping 1.1.1.1
PING 1.1.1.1 (1.1.1.1): 56 data bytes
64 bytes from 1.1.1.1: icmp_seq=0 ttl=54 time=21.439 ms
64 bytes from 1.1.1.1: icmp_seq=1 ttl=54 time=12.201 ms
64 bytes from 1.1.1.1: icmp_seq=2 ttl=54 time=19.945 ms
64 bytes from 1.1.1.1: icmp_seq=3 ttl=54 time=19.250 ms
64 bytes from 1.1.1.1: icmp_seq=4 ttl=54 time=20.691 ms
64 bytes from 1.1.1.1: icmp_seq=5 ttl=54 time=13.313 ms
64 bytes from 1.1.1.1: icmp_seq=6 ttl=54 time=19.154 ms
64 bytes from 1.1.1.1: icmp_seq=7 ttl=54 time=19.491 ms
64 bytes from 1.1.1.1: icmp_seq=8 ttl=54 time=13.291 ms
```

For more information, see [ping](#).

flowctl

Use the **flowctl** command to manage and troubleshoot deep packet inspection (DPI) on Cisco Cyber Vision sensors.

flowctl [*options*] *command* [*args..*]

Syntax Description	Options	
	--port	Specifies the flow HTTP port. Default: 6666
	--syncd-sock	Specifies the sensorsyncd HTTP socket. Default: /tmp/sensorsyncd/sensorsyncd.sock
	--scand-port	Specifies the scan HTTP port. Default: 6668
	Commands	Adds variable export periods for DPAD.
	add-dpad-variable-export-periods	
	buffer-ratio	Sets the flow buffer ratio (RAM percentage).
	count-files	Counts the number of files in the flow directory.
	disk	Displays disk usage.
	dump-pcap	Writes a PCAP file containing the latest received packets.
	environment	Displays IOX environment variables.
	flush tcp,	Asks flow to flush all TCP connections (use with caution).
	forget,	Forgets pending data and reloads services. Default: False
	list-dpad-variable-export-periods	Lists current variable export periods for DPAD.
	meminfo	Displays memory information.
	network-interfaces	Displays network interface information.
	pause	Pauses flow processing.
	pids	Returns flow PIDs.
	ping	Checks flow status.
	print-conf	Prints the flow configuration file.
	processes	Displays information about running processes.
	read-capture-file,	Uploads, and analyzes a PCAP file (modified timestamps).

read-capture-file-raw,	Uploads, and analyzes a PCAP file (original timestamps).
reload	Asks flow to reload the configuration file.
remove-filter	Removes BPF filter from flow configuration.
set-dpad-variable-export-periods	Replaces variable export periods for DPAD.
set-sensor-id	Updates the sensor ID in the flow configuration.
since-last-captured-packet	Displays the duration since the last captured packet (in milliseconds).
start-recording	Starts recording packets.
stats	Prints flow run time statistics.
stop-recording	Stops recording packets.
sub-dpad-variable-export-periods	Removes variable export periods for DPAD.
syncd-stats	Prints sensorsyncd run-time statistics.
unpause	Unpauses flow processing.
update-filter	Updates BPF filter in flow configuration.

Command History

Release Modification

4.0	This command was introduced.
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This example displays how to print the flow run-time statistics:

```
sh-5.0# flowctl stats --human
{
  "flow_dumper_active": 0,
  "flow_internal_buffer_length": 0,
  "flow_internal_buffer_memory": 12582912,
  "flow_internal_buffer_use_percent": 0,
  "flow_nb_afpacket_captured_packets_eth1": 572724,
  "flow_nb_afpacket_dropped_packets_eth1": 0,
  "flow_nb_erspan_decapsulation_error": 0,
  "flow_nb_erspan_fragemented_packets": 0,
  "flow_nb_erspan_ip4": 0,
  "flow_nb_flows_in_flowtable": 4,
  "flow_nb_hsrp_lru_errors": 0,
  "flow_nb_iface_dropped_packets_eth1": 0,
  "flow_nb_ipv4_defrag_errors": 0,
  "flow_nb_no_flow_cleaned_up": 0,
  "flow_nb_packets_deduplicated": 497837,
  "flow_nb_packets_per_interface_eth1": 572724,
  "flow_nb_panics_recovered": 0,
  "flow_nb_s7plus_subscriptions": 0,
  "flow_nb_s7plus_subscriptions_dropped": 0,
  "flow_nb_scan_detected_sources": 0,
  "flow_nb_too_many_flows": 0,
  "flow_nb_tracked_packets": 74887,
```

```
"flow_nb_tracked_packets_per_layer_icmp": 10,  
"flow_nb_tracked_packets_per_layer_tcp": 354,  
"flow_nb_tracked_packets_per_protocol_arp": 4,  
"flow_nb_tracked_packets_per_protocol_cisco_discovery": 26396,  
"flow_nb_tracked_packets_per_protocol_icmp": 10,  
"flow_nb_tracked_packets_per_protocol_lldp": 95152,  
"flow_nb_tracked_packets_per_protocol_smb": 222,  
"flow_nb_tracked_packets_per_protocol_snap": 26396,  
"flow_paused": 0,  
"flow_since_last_captured_packet_ms": 461,  
"flow_sum_capture_length_eth1": 82221916,  
"flow_sum_length_eth1": 82221916,  
"flow_sum_tracked_capture_length": 26207377,  
"flow_sum_tracked_length": 26207377  
}
```

route

Use the **route** command to view the routing table.

route -n

This example displays how to check the routing table:

```
root@center100:~# route -n
Kernel IP routing table
```

Destination	Gateway	Genmask	Flags	Metric	Ref	Use	Iface
0.0.0.0	10.2.3.254	0.0.0.0	UG	0	0	0	eth0
10.2.0.0	0.0.0.0	255.255.252.0	U	0	0	0	eth0
169.254.0.0	0.0.0.0	255.255.255.248	U	0	0	0	brsyslogd
169.254.0.8	0.0.0.0	255.255.255.252	U	0	0	0	brntpd
169.254.0.16	0.0.0.0	255.255.255.248	U	0	0	0	brburrow
169.254.0.32	0.0.0.0	255.255.255.248	U	0	0	0	brbackend
169.254.0.40	0.0.0.0	255.255.255.252	U	0	0	0	brhaproxyadmin
169.254.0.48	0.0.0.0	255.255.255.252	U	0	0	0	brhaproxyacq
169.254.0.56	0.0.0.0	255.255.255.248	U	0	0	0	brhaproxylog
169.254.0.64	0.0.0.0	255.255.255.248	U	0	0	0	bralfred
169.254.0.72	0.0.0.0	255.255.255.248	U	0	0	0	brsysinfodh
169.254.0.80	0.0.0.0	255.255.255.248	U	0	0	0	brsensorinputd
169.254.0.88	0.0.0.0	255.255.255.248	U	0	0	0	brpxgridagent
169.254.0.96	0.0.0.0	255.255.255.248	U	0	0	0	brext-apid
169.254.0.120	0.0.0.0	255.255.255.248	U	0	0	0	brsyncd
169.254.0.128	0.0.0.0	255.255.255.248	U	0	0	0	braspic
169.254.0.136	0.0.0.0	255.255.255.248	U	0	0	0	brnodeexporter
169.254.0.144	0.0.0.0	255.255.255.248	U	0	0	0	brpgexporter
169.254.0.152	0.0.0.0	255.255.255.248	U	0	0	0	brmarmotd
169.254.0.160	0.0.0.0	255.255.255.248	U	0	0	0	brrefreshviews
169.254.0.168	0.0.0.0	255.255.255.248	U	0	0	0	brsnmp
169.254.0.224	0.0.0.0	255.255.255.224	U	0	0	0	brrmq
192.168.69.0	0.0.0.0	255.255.255.0	U	0	0	0	eth1

For more information, see [route](#).

ssh

Use the **ssh** command to securely log in to a remote machine in a network.

ssh

This example displays how to log in to a remote host.

```
Device# ssh cv-admin@center100
```

For more information, see [ssh](#).

tcpdump

Use the **tcpdump** command on the sensor application CLI to create PCAP files, which may be required for troubleshooting or issue reporting.

tcpdump --options

Syntax Description	-i interface	Creates dumps for the specified interface.
	-G rotate_seconds	Rotates the dump file after the specified duration.
	-z postrotate_command	Used with -G option. Creates a zip file using the gunzip utility.
	--Wfilecount	Used with -G option. Limits the number of rotated dump files to the specified value.
	-wfile	Writes the PCAP data to the specified file.
Command History	Release	Modification
	Release 4.0.0	This command was introduced.

This example creates 5 zipped PCAP files for 120 seconds of traffic and saves the files to the `/iox_data/appdata/` folder

```
sh-5.0# tcpdump -i eth1 -G 120 -z gzip -W 5 -w /iox_data/appdata/capture-%H-%M-%S.pcap
tcpdump: listening on eth1, link-type EN10MB (Ethernet), snapshot length 262144 bytes
Maximum file limit reached: 5
648161 packets captured
861891 packets received by filter
212901 packets dropped by kernel
```

To verify the creation of the files at the specified location, run this command:

```
sh-5.0# ls -lh /iox_data/appdata/-rw-r--r-- 1 root root 3.8M Jun 21 11:40
capture-11-37-51.pcap.gz
-rw-r--r-- 1 root root 4.6M Jun 21 11:42 capture-11-39-51.pcap.gz
-rw-r--r-- 1 root root 3.8M Jun 21 11:44 capture-11-41-58.pcap.gz
-rw-r--r-- 1 root root 4.4M Jun 21 11:46 capture-11-44-15.pcap.gz
-rw-r--r-- 1 root root 5.4M Jun 21 11:49 capture-11-46-15.pcap.gz
```

This example checks if any data is received or sent on the **eth0** interface on the Cisco Cyber Vision Center:

```
root@center100:~# tcpdump -i eth0 -w root@center100:~# tcpdump -i eth0 -w
/data/tmp/tcpdumpeth0.pcap
tcpdump: listening on eth0, link-type EN10MB (Ethernet), snapshot length 262144 bytes
^C262 packets captured
264 packets received by filter
0 packets dropped by kernel
```

For more information, see [tcpdump](#).

ip address

Use the **ip address** command to check the network interface IP address and the status of the interface. You can use this command for troubleshooting when the Cisco Cyber Vision Center is not reachable.

```
ip address [ show [ dev IFNAME ] ]
```

Syntax Description	IFNAME Interface name such as eth0, eth1, and so on.				
Command History	<table> <tr> <th>Release</th><th>Modification</th></tr> <tr> <td>3.0.0</td><td>This command was introduced.</td></tr> </table>	Release	Modification	3.0.0	This command was introduced.
Release	Modification				
3.0.0	This command was introduced.				

This example displays how to check the network interface IP address and the status of the "eth0" interface:

```
root@center100:~# ip a show dev eth0
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default
qlen 1000
    link/ether 00:50:56:8f:9d:16 brd ff:ff:ff:ff:ff:ff
    inet 10.2.3.102/22 brd 10.2.3.255 scope global eth0
        valid_lft forever preferred_lft forever
```

For more information, see [ip address](#).

iptables

Use the **iptables** command to list the packet filter rules.

```
iptables -L [ chain ]
```

Syntax Description	chain To list rules in the specified chain.				
Command History	<table> <tr> <th>Release</th><th>Modification</th></tr> <tr> <td>3.0.0</td><td>This command was introduced.</td></tr> </table>	Release	Modification	3.0.0	This command was introduced.
Release	Modification				
3.0.0	This command was introduced.				

This example displays how to check the rules of the IP table:

```
root@center100:~# iptables -L
Chain INPUT (policy DROP)
target     prot opt source                destination
ACCEPT     all  --  anywhere               anywhere
DROP       tcp  --  anywhere               anywhere        tcp flags: !FIN, SYN, RST, ACK/ SYN
            state NEW
DROP       all  --  anywhere               anywhere        state INVALID
ACCEPT     all  --  anywhere               anywhere        state RELATED, ESTABLISHED
NFLOG      all  --  anywhere               anywhere        ! match-set
center_admin_networks src nflog-prefix "DropUnAuthNetwork:" nflog-group 1
DROP       all  --  anywhere               anywhere        ! match-set
center_admin_networks src
ACCEPT     icmp --  anywhere               anywhere        icmp destination-unreachable
ACCEPT     icmp --  anywhere               anywhere        icmp source-quench
ACCEPT     icmp --  anywhere               anywhere        icmp time-exceeded
ACCEPT     icmp --  anywhere               anywhere        icmp parameter-problem
ACCEPT     icmp --  anywhere               anywhere        icmp echo-request
ACCEPT     tcp  --  anywhere               anywhere        tcp dpt:ssh state NEW
ACCEPT     udp  --  anywhere               anywhere        udp dpt:bootps state NEW
ACCEPT     udp  --  anywhere               anywhere        udp dpt:bootpc state NEW
```

For more information, see [iptables](#).

nslookup

Use the **nslookup** command to query the name servers for information about various hosts and domains.

nslookup [*DNS_server*]

Syntax Description	<i>DNS_server</i> FQDN or IP address of the DNS server.				
Command History	<table> <tr> <th>Release</th><th>Modification</th></tr> <tr> <td>3.0</td><td>This command was introduced.</td></tr> </table>	Release	Modification	3.0	This command was introduced.
Release	Modification				
3.0	This command was introduced.				

To check the name resolution of the server, "iseccv002.lab-autom-ccv.local", run this command:

```
root@center100:~# nslookup iseccv00x.lab-ccv.local

Server:      10.2.3.254
Address 1: 10.2.3.254 _gateway

Name:        iseccv00x.lab-ccv.local
Address 1: 10.2.2.131 iseccv00x.lab-ccv.local
```

To check the name resolution of the server, "8.8.8.8", run this command:

```
root@center100:~# nslookup 8.8.8.8

Server:      208.67.220.220
Address 1: 208.67.220.220 dns.sse.cisco.com

Name:        8.8.8.8
Address 1: 8.8.8.8 dns.google
```

ntpq

Use the **ntpq** command to check the NTP server communication details.

Syntax

ntpq -c peer *IP_address*

Syntax Description	IP_address
	IP address of the NTP server

Command History	Release	Modification
	3.0	This command was introduced.

This example displays the NTP server communication details:

```
root@center100:~# ntpq -c peer 169.254.0.10
remote           refid          st t when poll reach  delay  offset  jitter
=====
LOCAL(0)         .LOCL.             10 l 159m   64    0   0.000  +0.000  0.000
*aer01-r4d20-dc- .GNSS.             1 u  10   256  377  22.445  -3.473  0.491
```