

Show Commands

collector

Syntax	collector [<i>ip-addr[:port]</i>] [detail]
Context	show>cflowd
Description	This command displays administrative and operational status of data collector configuration.
Parameters	<p><i>ip-addr</i> — Display only information about the specified collector IP address.</p> <p>Default all collectors</p> <p><i>:port</i> — Display only information the collector on the specified UDP port.</p> <p>Default all UDP ports</p> <p>Values 1 — 65535</p> <p>detail — Displays details about either all collectors or the specified collector.</p>
Output	cflowd Collector Output — The following table describes the show cflowd collector output fields:

Table 20: Show Cflowd Collector Output Fields

Label	Description
Host Address	The IP address of a remote Cflowd collector host to receive the exported Cflowd data.
Port	The UDP port number on the remote Cflowd collector host to receive the exported Cflowd data.
AS Type	The style of AS reporting used in the exported flow data. <i>origin</i> — Reflects the endpoints of the AS path which the flow is following. <i>peer</i> — Reflects the AS of the previous and next hops for the flow.
Version	Specifies the configured version for the associated collector.
Admin	The desired administrative state for this Cflowd remote collector host.
Oper	The current operational status of this Cflowd remote collector host.
Recs Sent	The number of Cflowd records that have been transmitted to this remote collector host.
Collectors	The total number of collectors using this IP address.

Sample Output

```
A:SR1 # show cflowd collector detail
=====
Cflowd Collectors (detail)
=====
Address : 138.120.135.103
Port : 2055
Description : Test v9 Collector
Version : 9
Admin State : up
Oper State : up
Packets Sent : 51
Last Changed : 09/03/2009 17:24:04
Last Pkt Sent : 09/03/2009 18:07:10
Template Set : Basic
-----
Traffic Type      Template Sent      Sent      Open      Errors
-----
IPv4              09/03/2009 18:07:29  51        1         0
MPLS             No template sent    0         0         0
IPv6             No template sent    0         0         0
=====
```

```
A:R51-CfmA# show cflowd collector
=====
Cflowd Collectors
=====
Host Address      Port  Version  AS Type  Admin  Oper      Sent
-----
138.120.135.103  2055  v5       peer    up     up        1380 records
138.120.135.103  9555  v8       origin  up     up         90 records
138.120.135.103  9996  v9       -       up     up         0 packets
138.120.214.224  2055  v5       origin  up     up        1380 records
-----
Collectors : 4
=====
```

Table 21: Show Cflowd Collector Detailed Output Fields

Label	Description
Address	The IP address of a remote Cflowd collector host to receive the exported Cflowd data.
Port	The UDP port number on the remote Cflowd collector host to receive the exported Cflowd data.
Description	A user-provided descriptive string for this Cflowd remote collector host.
Version	The version of the flow data sent to the collector.

Table 21: Show Cflowd Collector Detailed Output Fields (Continued)

Label	Description (Continued)
AS Type	The style of AS reporting used in the exported flow data. <i>origin</i> – Reflects the endpoints of the AS path which the flow is following. <i>peer</i> – Reflects the AS of the previous and next hops for the flow.
Admin State	The desired administrative state for this Cflowd remote collector host.
Oper State	The current operational status of this Cflowd remote collector host.
Records Sent	The number of Cflowd records that have been transmitted to this remote collector host.
Last Changed	The time when this row entry was last changed.
Last Pkt Sent	The time when the last Cflowd packet was sent to this remote collector host.
Aggregation Type	The bit mask which specifies the aggregation scheme(s) used to aggregate multiple individual flows into an aggregated flow for export to this remote host collector. <i>none</i> – No data will be exported for this remote collector host. <i>raw</i> – Flow data is exported without aggregation in version 5 format. All other aggregation types use version 8 format to export the flow data to this remote host collector.
Collectors	The total number of collectors using this IP address.
Sent	The number of packets with flow data sent to the associated collector.
Open	This counter shows the number of partially filled packets which have some flow data but are not yet filled or have been timed out (60 seconds maximum).
Error	This counter increments when there was an error during exporting of the collector packet. The most common reason will be a UDP unreachable destination for the configured collector.

```
A:R51-CfmA# show cflowd collector detail
```

```
=====
```

```
Cflowd Collectors (detail)
```

```
=====
```

```
Address           : 138.120.135.103
Port              : 2055
Description       : Test v5 Collector
Version           : 5
AS Type           : peer
Admin State       : up
Oper State        : up
```

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```
Records Sent           : 1260
Last Changed          : 09/03/2009 17:24:04
Last Pkt Sent         : 09/03/2009 18:07:10
-----
                               Sent           Open           Errors
-----
                               42            0              0
=====
Address                : 138.120.135.103
Port                  : 9555
Description           : Test v8 Collector
Version              : 8
AS Type               : origin
Admin State           : up
Oper State            : up
Records Sent         : 82
Last Changed          : 09/03/2009 17:24:04
Last Pkt Sent         : 09/03/2009 18:06:41
-----
Aggregation Type      Status           Sent           Open           Errors
-----
as-matrix             Disabled         0              0              0
protocol-port         Disabled         0              0              0
source-prefix         Enabled          21             0              0
destination-prefix    Enabled          21             0              0
source-destination-prefix Disabled         0              0              0
raw                   Disabled         0              0              0
=====
Address                : 138.120.135.103
Port                  : 9996
Description           : Test v9 Collector
Version              : 9
Admin State           : up
Oper State            : up
Packets Sent         : 51
Last Changed          : 09/03/2009 17:24:04
Last Pkt Sent         : 09/03/2009 18:07:10
Template Set          : Basic
-----
Traffic Type          Template Sent      Sent           Open           Errors
-----
IPv4                  09/03/2009 18:07:29 51             1              0
MPLS                  No template sent   0              0              0
IPv6                  No template sent   0              0              0
=====
A:R51-CfmA#
```

interface

- Syntax** `interface [ip-addr | ip-int-name]`
- Context** `show>cflowd`
- Description** Displays the administrative and operational status of the interfaces with cflowd enabled.
- Parameters** `ip-addr` — Display only information for the IP interface with the specified IP address.
- Default** all interfaces with cflowd enabled.

ip-int-name — Display only information for the IP interface with the specified name.

Default all interfaces with cflowd enabled.

Output **cflowd Interface Output** — The following table describes the show cflowd interface output fields.

Label	Description
Interface	Displays the physical port identifier.
IPv4 Address	Displays the primary IPv4 address for the associated IP interface.
IPv6 Address	Displays the primary IPv6 address for the associated IP interface.
Router	Displays the virtual router index (Base = 0).
IF Index	Displays the Global IP interface index.
Mode	Displays the cflowd sampling type and direction. intf — Interface based sampling acl — ACL based sampling ingr — Ingress sampling egr — Egress sampling both — Both ingress and egress sampling
Admin	Displays the administrative state of the interface.
Oper-IPv4	Displays the operational state for IPv4 sampling.
Oper-IPv6	Displays the operational state for IPv6 sampling.

Sample Output

```
B:sr-002# show cflowd interface [ip-addr | ip-int-name]
=====
Cflowd Interfaces
=====
Interface                Router    IF Index  Mode      Admin
  IPv4 Address              Oper IPv4
  IPv6 Address              Oper IPv6
-----
ipv4ipv6NamedIf          Base      381      intf/ing  Up
  5.5.5.5/24                Up
  55::55/128                 Up
ipv4NamedIf              5         254      acl-egr   Up
  10.10.10.10/24            Up
  N/A                        Down
ipv6NamedIf              Base      380      i/f-both  Up
  N/A                        Down
  1234:5678::9/128          Up
-----
Interfaces : 3
=====
```

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```
B:sr-002# show cflowd interface 11.10.1.2
=====
Cflowd Interfaces
=====
Interface: To_Sr1
IP address: 11.10.1.2/24
Admin/Oper state: Up/Up
Sampling Mode: (ingress | egress | both)
Total Flows seen: 1302000
Pkts sampled (ingress/egress) : 60103/70102
Bytes sampled (ingress/egress) : 6010300/7010200
Active flows (ingress/egress) : 6010/7010

B:sr-002# show cflowd interface
=====
Cflowd Interfaces
=====
Interface                               IP Address           Mode                 Admin  Oper
-----
To_Sr1                                  1.10.1.2/24         Interface            Up     Up
To_C2                                    1.12.1.2/24         Interface            Up     Up
To_Cisco_7600                           1.13.1.2/24         Interface            Up     Up
To_E                                       1.11.1.2/24         Interface            Up     Up
To_G2                                    150.153.1.1/24      Interface            Up     Up
To_Sr1_Sonet                             150.140.1.2/24      Interface            Up     Down
Main                                      120.1.1.1/24        Filter               Down   Down
New                                       120.2.1.1/24        Filter               Up     Up
-----
Interfaces : 8
=====
B:sr12-002#
```

status

- Syntax** **status**
- Context** show>cflowd
- Description** This command displays basic information regarding the administrative and operational status of cflowd.
- Output** **cflowd Status Output** — The following table describes the show cflowd status output fields:

Table 22: Cflowd Status Output

Label	Description
Cflowd Admin Status	The desired administrative state for this Cflowd remote collector host.
Cflowd Oper Status	The current operational status of this Cflowd remote collector host.

Table 22: Cflowd Status Output (Continued)

Label	Description (Continued)
Active Timeout	The maximum amount of time, in minutes, before an active flow will be exported. If an individual flow is active for this amount of time, the flow is exported and a new flow is created.
Inactive Timeout	Inactive timeout in seconds.
Template Retransmit	The time in seconds before template definitions are sent.
Cache Size	The maximum number of active flows to be maintained in the flow cache table.
Overflow	The percentage number of flows to be flushed when the flow cache size has been exceeded.
Sample Rate	The rate at which traffic is sampled and forwarded for Cflowd analysis. one (1) – All packets are analyzed. 1000 (default) – Every 1000th packet is analyzed.
Active Flows	The current number of active flows being collected.
Total Pkts Rcvd	The total number of packets sampled and forwarded for Cflowd analysis.
Total Pkts Dropped	The total number of packets dropped.
Aggregation Info:	
Type	The type of data to be aggregated and to the collector.
Status	enabled – Specifies that the aggregation type is enabled. disabled – Specifies that the aggregation type is disabled.
Sent	The number of packets with flow data sent to the associated collector.
Open	This counter shows the number of partially filled packets which have some flow data but are not yet filled or have been timed out (60 seconds maximum).
Error	This counter increments when there was an error during exporting of the collector packet. The most common reason will be a UDP unreachable destination for the configured collector.
Overflow events	The number of times the active cache overflowed.
Dropped Flows	Total number of flows dropped due to cache overflow events.

Sample Output

```
sr1# show cflowd status
```

```
=====
```

```
Cflowd Status
```

```
=====
```

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```
Cflowd Admin Status : Enabled
Cflowd Oper Status : Enabled
Active Timeout : 1 minutes
Inactive Timeout : 30 seconds
Template Retransmit : 60 seconds
Cache Size : 65536 entries
Overflow : 1%
Sample Rate : 1
Active Flows : 34000
Overflow events 10
Dropped Flows: 0
Pkts Rcvd : 801600
Total Pkts Dropped : 0
```

```
Raw
Times flow created      160000
Times flow matched     224428382
Total flows flushed     150000
```

```
=====
Version Info
=====
```

Version	Status	Sent	Open	Errors
5	Enabled	92	0	0
8	Enabled	46	0	0
9	Enabled	56	1	0
10	Enabled	39	1	0

```
=====
Cflowd Status
=====
```

```
Cflowd Admin Status : Enabled
Cflowd Oper Status : Enabled
Active Timeout : 1 minutes
Inactive Timeout : 30 seconds
Template Retransmit : 60 seconds
Cache Size : 65536 entries
Overflow : 1%
Sample Rate : 1
Active Flows : 34
Total Pkts Rcvd : 801600
Total Pkts Dropped : 0
```

```
=====
Version Info
=====
```

Version	Status	Sent	Open	Errors
5	Enabled	92	0	0
8	Enabled	46	0	0
9	Enabled	56	1	0
10	Enabled	39	1	0

Tools Commands

cache

Syntax `cache {all | aggregate {src-dst-proto | src-dst-proto-port}} family {ipv4 | ipv6}`

Context `tools>dump>cflowd`

Description This command displays the contents of the CFLOWD active cache. This information can be displayed either in raw form where every flow entry is displayed or in an aggregated form.

Parameters

- all** — Display the raw active cache flow data with no aggregation.
- aggregate** — Display the aggregated active cache flow data.
 - src-dst-proto** — Aggregates the active flow cache based on the source and destination IP address and the IP protocol value.
 - src-dst-proto-port** — Aggregates the active flow cache based on the source and destination IP address, IP protocol value, and the source and destination port numbers.
- family** — Specifies which IP address family flow data should be displayed.
 - ipv4** — Displays the IPv4 flow data.
 - ipv6** — Displays the IPv6 flow data.

Output **tools dump cflowd cache Output** — The following table describes the tools dump cflowd cache output fields:

Table 23: tools dump cflowd cache Output Fields

Label	Description
Proto/Protocol	Displays the IPv4 or IPv6 protocol type.
Source Address/ Src-IP	Displays the source IP address of the flow (IPv4 or IPv6).
Destination Address/Dst-IP	Displays the destination IP address of the flow (IPv4 or IPv6).
Intf/Ingr	Displays the ingress interface associated with the sampled flow (only displayed with the raw (all) output).
Intf/Egr	Displays the egress interface associated with the sampled flow (only displayed with the raw (all) output).
S-Port	Displays the source protocol port number.
D-Port	Displays the destination protocol port number.
Pkt-Cnt	Displays the total number of packets sampled for the associated flow.

Table 23: tools dump cflowd cache Output Fields

Label	Description
Byte-Cnt	Displays the total number of bytes of traffic sampled for the associated flow.
Start-Time	Displays the system time when the first packet was sampled for the associated flow.
Flags	Displays the IP flag value from the sampled IP flow header (only displayed with the raw (all) output).
ToS	Displays the ToS byte values from the sampled IP flow header (only displayed with the raw (all) output).
(Src) Mask	Displays the IP route mask for the route to the flow source IP address associated with the flow (only displayed with the raw (all) output).
(Dst) Mask	Displays the IP route mask for the route to the flow destination IP address associated with the flow (only displayed with the raw (all) output).
(Src) AS	Displays the ASN associated with the route to the flow source IP address associated with the flow (only displayed with the raw (all) output).
(Dst) AS	Displays the ASN associated with the route to the flow destination IP address associated with the flow (only displayed with the raw (all) output).
vRtr-ID	Displays the Virtual Router ID associated with the reported IP flow (only displayed with the raw (all) output).

packet-size

Syntax `packet-size [ipv4 | ipv6] [clear]`

Context `tools>dump>cflowd`

Description This command displays packet size distribution for sampled IP traffic. Values are displays in decimal format (1.0 = 100%, .500 = 50%). Separate statistics are maintained and shown for IPv4 and IPv6 traffic.

Sample Output

```
SR-12# tools dump cflowd packet-size ipv4
IP packet size distribution (801600 total packets):
  1-32  64  96 128 160 192 224 256 288 320 352 384 416 448 480
  .000 .250 .000 .000 .010 .100 .500 .090 .000 .000 .000 .000 .000 .000 .000

  512  544  576 1024 1536 2048 2560 3072 3584 4096 4608 9000
  .000 .000 .000 .050 .000 .000 .000 .000 .000 .000 .000 .000
```

top-flows

Syntax	top-flows [ipv4 ipv6 mpls] [clear]
Context	tools>dump>cflowd
Description	This command displays the top 20 (highest traffic volume) flows for IPv4, IPv6 or MPLS traffic types collected since the cflowd top-flow table was last cleared or initialized.
Output	Tools Dump Cflowd Top-Flows Output — The following table describes the tools dump cflowd top-flows output fields:

Table 24: Tools Dump Cflowd Top-flows Output Fields

Label	Description
Ingress	Displays the ingress interface ID.
Src IP	Displays the source IP address of the flow (IPv4 or IPv6).
Egress	Displays the egress interface ID.
Dest IP	Displays the destination IP address of the flow (IPv4 or IPv6).
Pr Proto	Displays the protocol type for flow.
TOS	Displays the Type of Service/DSCP bits field markings.
Flgs	Displays the protocol flag markings.
Pkts	Displays the total number of packets sampled for this flow (since stats were last cleared).
vRtr-ID	Displays the vRouter context the flow was sampled in.
S-Port Src Port	Displays the source protocol port number.
Msk	Displays the route prefix length for route to source IP address.
AS	Displays the Autonomous Systems number for the source route (the AS is either originating AS or peer AS depending on cflowd configuration).
D-Port Dst Port	Displays the destination protocol port number.
Msk	Displays the route prefix length for route to destination IP address (Forwarding route).
AS	Displays the Autonomous Systems number for the destination route (the AS is either originating AS or peer AS depending on cflowd configuration)
Nexthop	Displays the next-hop address used to forward traffic associated with the flow.

Table 24: Tools Dump Cflowd Top-flows Out put Fields

Label	Description
Avg pkt size	Displays the average packet size of a sampled traffic associated with this flow (total number of packets sampled / total number of packets sampled).
Active	Displays the number of seconds the flow has been active.

Sample Output

```

1           2           3           4           5           6           7           8
1234567890123456789012345678901234567890123456789012345678901234567890
Sr1# tools dump cflowd top-flows ipv4

```

```

Ingress i/f   SrcIP           Egress i/f   DstIP           Pr TOS Flgs Pkts
vRtr-ID      S-Port Msk AS      D-Port Msk AS NextHop       Avg Pkt Size Active
-----
1000         52.52.52.1     2001         123.123.123.122 0x01 55  0x10 3748
10201        0000 /8 50      0000 /8 40  202.120.130.2   220   3600
.....

```

```

1           2           3           4           5           6           7           8
1234567890123456789012345678901234567890123456789012345678901234567890
Sr1# tools dump cflowd top-flows ipv6
SrcIP (up to IPv6)           Ingress i/f   Src Port   vRtr ID   ToS
DstIP (upto IPv6)           Egress i/f   Dst Port   Proto     Flags
Nexthop (uptoIPv6)         Total Pkts   Avg Pkt   Active(sec)
2001:0db8:85a3:0000:0000:8a2e:0370:7334 60005        10020     0         0x12
2001:0db8:85a3:0000:0000:8a2e:0280:1234 60325        20010     17        0x23
2001:0db8:85a3:0000:0000:8a2e:1234:5678 1234567890   1500     13600
.....

```

```

1           2           3           4           5           6           7           8
1234567890123456789012345678901234567890123456789012345678901234567890
Sr1# tools dump cflowd top-flows mpls
Label-1   Label-2   Label-3   Label-4   Total Pkts   Avg Pkt   Active(s)
SrcIP (up to IPv6)           Ingress i/f   Src Port   ToS
DstIP (upto IPv6)           Egress i/f   Dst Port   Proto     Flags
-----

```

top-protocols

Syntax top-protocols

Context tools>dump>cflowd [clear]

Description This command displays the summary information for the top 20 protocol traffic seen in the cflowd cache. All statistics are calculated based on the data collected since the last clearing of the cflowd stats with clear keyword for this command.

If the clear optional keyword is given, then the top-flows are displayed, and then this cache is cleared.

Output **Tools Dump Cflowd Top-protocols Output** — The following table describes the tools dump cflowd top-protocols output fields:

Table 25: Tools Dump Cflowd Top-protocols Output Fields

Label	Description
Protocol ID	Displays the IPv4 or IPv6 protocol type. This will either print the well known protocol name or the decimal protocol number.
Total Flows	Displays the total number of flows recorded since the last clearing of cflowd statistics with this protocol type.
Flows/Sec	Displays the average number of flows detected for the associated protocol type. (Total flows / number of seconds since last clear)
Packets/Flow	Displays the average number of packets per flow. (Total number of packets / total flows)
Bytes/Pkts	Displays the average number of bytes per packet for the associated protocol type. (Total number of bytes for the associated protocol / total number of packets seen for the associated protocol)
Packets/Sec	Displays the average number of packets seen for the associated protocol type. (Number of packets / time since last clear)
Duration/Flow	Displays the average lifetime of a flow for the associated protocol type. (Number of seconds since last clear / total flows)
Bandwidth Total (%)	Displays the percentage of bandwidth consumed by the associated protocol type. (Total protocol bytes / total bytes of all flows)

Sample Output

```
SR# tools dump cflowd top-protocols
```

The top 20 IPv4 protocols seen by cflowd are:

Current Time: 08/29/2011 15:36:15

Last Cleared Time: 08/29/2011 15:35:08

Protocol ID	Total Flows	Flows /Sec	Packets /Flow	Bytes /Pkt	Packets /Sec	Duration /Flow	% Total Bandwidth
UDP	2	0	6	100	0	6	75%
pr1	1	0	6	64	0	6	24%
TOTALS	3	0	6	88	0	6	100%

Clear Commands

cflowd

Syntax	cflowd
Context	clear
Description	Clears the raw and aggregation flow caches which are sending flow data to the configured collectors. This action will trigger all the flows to be discarded. The cache restarts flow data collection from a fresh state. This command also clears global stats collector stats listed in the cflowd show commands.