Flow Cache Maintenance

The size and the number of entries in the flow cache are platform dependent. Table A-1 lists the default values.

Table A.1. Flow Cache Entry Default Values

Platform	Default Cache Entries	Default Memory for NetFlow Cache
AS5800, 4*x*00, 3600, 2600, 2500, 1600, 1400	4000	256 KB
7200, RSP7000	64,000	4 MB
VIP with 16 MB DRAM	2000	128 KB
VIP with 32 MB DRAM	32,000	2 MB
VIP with 64 MB DRAM	64,000	4 MB
VIP with 128 MB DRAM	128,000	8 MB

Each time a new flow is added to the NetFlow cache, the number of available NetFlow cache entries is checked. If only a few free flows remain, NetFlow attempts to age 30 of the existing flows using an accelerated timeout. If only one free flow remains, NetFlow automatically ages 30 existing flows regardless of their age. The intent is to ensure free flow entries always are available.

The aging process includes the following:

- Flows that have been idle for 15 seconds are expired and removed from the cache.
- Long-lived flows (more than 30 minutes by default) are expired and removed from the cache. The flow expiration parameter is user configurable.
- TCP flows that have reached the end of byte stream (FIN) or that have been reset (RST) are expired from the cache.

Example A-1 demonstrates the output of the **show ip cache verbose flow** command, which displays details about the NetFlow cache.

Example A-1. *show ip cache verbose flow* Command Output Displays NetFlow Cache Details

router**#sh ip cache verbose flow** IP packet size distribution (5693M total packets): 1-32 64 96 128 160 192 224 256 288 320 352 384 416 448
480 .000 .135 .166 .100 .066 .051 .039 .033 .028 .024 .021 .019 .017 .015 .013 512 544 576 1024 1536 2048 2560 3072 3584 4096 4608 .012 .011 .068 .065 .108 .000 .000 .000 .000 .000 .000 IP Flow Switching Cache, 2228352 bytes 6005 active, 26763 inactive, 134383926 added 1347994477 ager polls, 0 flow alloc failures last clearing of statistics never Protocol Total Flows Packets Bytes Packets Active(Sec) Idle(Sec) ---- ---- Flows /Sec /Flow /Pkt /Sec /Flow /Flow TCP-Telnet 1248 0.0 3 40 0.0 0.5 16.6 TCP-FTP 10 0.0 6 46 0.0 4.3 11.5 TCP-FTPD 2 0.0 1011 40 0.0 26.8 5.9 TCP-WWW 490 0.0 8 313 0.0 4.5 13.2 TCP-SMTP 14045 0.0 16 363 0.0 0.5 14.8 TCP-other 105635036 29.1 53 363 1560.5 51.8 15.7 UDP-DNS 593992 0.1 1 66 0.1 0.0 16.8 UDP-NTP 286608 0.0 1 76 0.0 0.1 16.7 UDP-other 25237407 6.9 1 83 10.4 0.1 16.8 ICMP 2558041 0.7 1 59 0.8 0.4 16.7 Total: 134326879 37.0 42 361 1572.1 40.7 15.9 SrcIf SrcIPaddress DstIf DstIPaddress Pr TOS Flgs Pkts Port Msk AS Port Msk AS NextHop B/Pk Active Gi1/0/0 63.75.60.227 Gi8/0/0 24.129.29.189 06 00 18 2 06BC /0 0 062F /0 0 0.0.0.0 48 2.0

The first section of the output in Example A-1 displays the packet size distribution percentages by packet size. Other notable fields include the following:

- **Pr—**

  The IP Protocol Field (for example, TCP = 6; UDP = 17) byte.

- **TOS—**

  Type of Service byte in the IP header.

- **Flgs—**

  The flags field contains the logical OR of the TCP flags for all packets of a given TCP flow. This field is undefined for non-TCP flows.

- **AS—**

  In the BGP autonomous system number field, a value of 0 for the AS number can be due to several reasons:

  - Traffic destined to the router.
  - Flows that are not routable.
  - Traffic local to the AS (in other words, traffic that is only Intra-AS).
  - Asymmetric routing. If a demand-based cache scheme (fast, optimum switching) is used as the switching method, then the source or the destination IP address cannot be in the route-cache due to asymmetric routing. CEF is topology driven and not data driven; therefore, CEF fixes this problem.
  - **peer-as** or **origin-as** has not explicitly been configured. **ip flow-export version 5 peer-as | origin-as** must be explicitly configured to enable the export and the collection of AS numbers.

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Index terms contained in this section

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