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Flow Export

Flow data is exported in UDP datagrams periodically (once per second) or as soon as a full UDP datagram of expired flows is available. The size of each flow record depends on the NetFlow version. Four versions of NetFlow Export currently are supported:

- **Version 1 (v1)—**

  Version 1 format was the original format supported in the initial Cisco IOS software releases containing NetFlow functionality.

- **Version 5 (v5)—**

  The Version 5 format added Border Gateway Protocol (BGP) autonomous system information and flow sequence numbers.

- **Version 7 (v7)—**

  The Version 7 format is an enhancement that adds NetFlow support for Cisco Catalyst 5000 series switches equipped with a NetFlow feature card (NFFC). Version 7 is supported only by the Catalyst 5000 NFFC.

- **Version 8 (v8)—**

  Version 8 is the format used to export aggregated NetFlow statistics via the Router-Based NetFlow Aggregation feature; this version also provides total flow sequence numbers.

Versions 2 through 4 and Version 6 either were not released or are not supported.

For a Version 1 datagram, up to 24 flows can be sent in a single UDP datagram of approximately 1200 bytes. For a Version 5 datagram, up to 30 flows can be sent in a single UDP datagram of approximately 1500 bytes. For a Version 7 datagram, up to 28 flows can be sent in a single UDP datagram of approximately 1500 bytes. Obviously, the flow collector application should support the flow version that is being exported from the router.

Router-Based Flow Aggregation Export (RBA)

Flow export from a busy interface with large numbers of flows can generate a very significant amount of NetFlow traffic. The RBA scheme (NetFlow Version 8) addresses this issue by aggregating the flows on the router without exporting the individual flows. As of this writing, IOS supports five NetFlow aggregation schemes:

- **Autonomous System aggregation scheme—**

  Provides significant NetFlow export data volume reduction and generates autonomous system–to–autonomous system traffic flow data. This aggregation scheme groups data flows with the same source Border Gateway Protocol (BGP) autonomous system, the destination BGP autonomous system, the input interface, and the output interface.

- **Destination Prefix aggregation scheme—**

  Generates data so you can examine the destinations of network traffic passing through a NetFlow-enabled device. This aggregation scheme groups data flows with the same destination prefix, destination prefix mask, destination BGP autonomous system, and output interface.

- **Prefix aggregation scheme—**

  Generates data so you can examine the sources and the destinations of network traffic passing through a NetFlow-enabled device. This aggregation scheme groups data flows with the same source prefix, destination prefix, source prefix mask, destination prefix mask, source BGP autonomous system, destination BGP autonomous system, input interface, and output interface.

- **Protocol Port aggregation scheme—**

  Generates data so you can examine network usage by traffic type. This aggregation scheme groups data flows with the same IP protocol, source port number, and destination port number when applicable.

- **Source Prefix aggregation scheme—**

  Generates data so you can examine the sources of network traffic passing through a NetFlow-enabled device. This aggregation scheme groups data flows with the same source prefix, source prefix mask, source BGP autonomous system, and input interface.

Each aggregation scheme uses its own cache, the size of which is configurable (default 4096 entries).

For more information on the NetFlow aggregation schemes, visit *www.cisco.com* and search for "NetFlow aggregation."

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