IP Flow Information Export (IPFIX) Information Elements Extension for Forwarding Exceptions

draft-mvmd-opsawg-ipfix-fwd-exceptions-07

Chaitanya Munukutla, Shivam Vaid (Juniper Networks, Inc.)

Aditya Mahale, Devang Patel (Google, Inc.)

IETF 116

March 16, 2023

Recap

- Dropped packets in a network may be subject to deep inspection along forwarding-path and sent to a host or software queue along with type of exception, in/out interface information and other relevant meta data.

- This proposal focuses on Extensions to IPFIX for exporting dropped packets exception information via push model.

- Some of the IPFIX Information Elements (IEs) already exist. This draft defines new Information Elements along with corresponding formats.
    - forwardingStatusCode - unsigned32
    - forwardingNexthopID - unsigned64
    - forwardingLookupType - unsigned8
    - underlyingIngressInterface - unsigned32

- Presented in IETF 110.
    - draft-mvmd-opsawg-ipfix-fwd-exceptions-02

Changes since IETF 110

- Comment 1: Extending forwardingExceptionCode to include all categories from IE89 – forwarded, dropped, consumed. Consider to include the existing code points from IE89 in forwardingExceptionCode as well to support a migration path so that a device does not need to export both IEs. **(Thomas Graf)**
  - Changes:
    - *Modified section 4.2.1 forwardingExceptionCode to forwardingStatusCode & incorporated all the existing categories from IE89.*

- Comment 2: Can we include a way to distinguish drops in data pipeline (layer2 or layer3) in the IPFIX packet. An IPFIX packet may contain additional information to classify which lookup failed in the internal pipeline. This internal classification maybe useful for debugging. **(Jeff Haas)**
  - Changes:
    - *Added section 4.2.3 forwardingLookupType to stream the last lookup type performed on the packet in ingress path.*

- Other changes
  - Added a new Information Element to report *underlyingIngressInterface* which represents the child member index of an aggregated ethernet interface bundle when a packet is processed by an ae interface.

Next steps

- Requesting feedback & comments.
- WG Adoption

Thank you!