IPFIX Reliability Extensions

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<draft-bclaise-ipfix-reliability-01.txt>

Paul Aitken <paitken@cisco.com>
Randall Stewart <rrs@cisco.com>
Peter Lei <peterlei@cisco.com>
Benoit Claise <bclaise@cisco.com>
Problem Statement

- We spoke about IPFIX for billing for a long time on the mailing list:
  Transport protocol
  Application Level Acknowledgement?
- RFC 3917
  Usage Based Accounting: reliability is a MUST
  “The reliability requirements defined in sections 5.1 and 6.3.2. are not
  sufficient to guarantee the level of reliability that is needed for many
  usage-based accounting systems.”
- Draft abstract
  “Defines an extension to the IP Flow Information eXport (IPFIX) protocol
  in order to accommodate the specific requirements of billing.”
Specifications
Transport

- PR-SCTP [RFC-3758] MUST be used
  - Data Records MUST also be sent over a reliable stream
  - A second SCTP association MUST be opened in advance
  - All Templates and Option Templates MUST be sent ahead of time
  - The SCTP association parameters SHOULD be tuned in order to allow a minimum detection time in case of connection failure
  - The Exporting process MUST retransmit the SCTP un-acknowledged information to its backup collector
Specifications
Reliable Server Pooling

- RSERPOOL architecture SHOULD be used
  Pool of Collecting Processes
  round-robin policy is the default RSerPool policy:
  When a Collecting Process fails, will automatically select a new Collecting Process from the pool
- Note: draft-coene-rserpool-applic-ipfix-02.txt
Specifications
Uniqueness

• The Collecting Process MUST create an unique packet ID out of the IPFIX Message Export Time, Sequence Number, Source ID, and Exporter

• The Collector MUST associate every Data Record with this unique packet ID

• Primary Collector SHOULD check missing Data Records from other Collectors

• And de-duplication if necessary
Open Issues & Conclusion

• Open Issues:
  Application Level ACK to be done
  Explain the communication between collector?

• Conclusion:
  No IPFIX protocol modifications, only extensions
  Even if not complete, this draft goal is to restart the reliability discussions