IPFIX SCTP Stream Restriction Change

draft-trammell-ipfix-sctp-change-00

http://www.ietf.org/internet-drafts/draft-trammell-ipfix-sctp-change-00.txt

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Tuesday, July 24, 2007

IETF 69 - Chicago, Illinois, USA

The Idea

- The usage of SCTP streams in IPFIX is unnecessarily restricted.
- Removing this restriction allows flexibility in implementation and innovation in stream usage with no negative impact.
- So, update the IPFIX Protocol with a new RFC to remove the restriction.

SCTP Stream Usage in ipfix-protocol

- Template Sets and Options Template Sets MUST be sent reliably.
- Template Sets and Options Template Sets SHOULD be sent on SCTP stream 0 and SHOULD NOT be sent on any other stream.
- Data Sets SHOULD NOT be sent on SCTP stream 0 and SHOULD be sent on some other stream.

Stream Restriction is Unnecessary

- These restrictions presume that PR-SCTP reliability is per-stream, but it is per-message.
- Requires at least two SCTP streams for every Transport Session.
  - Not ideal for implementations wishing to use SCTP for multi-homing or partial reliability without multi-streaming.
- Requires Templates to be separated from their Data Sets across streams.
  - May lead to greater buffering requirements at Collecting Process if Template Set stream is more blocked than Data Set stream(s).
- Prevents innovation in stream usage.

Proposed New SCTP Stream Usage

- Any type of Set MAY be sent on any SCTP stream.
- Collecting Process MUST accept any type of Set on any SCTP stream.
- Reiteration of related restrictions for clarity:
  - Template Sets and Options Template Sets MUST be sent reliably.
  - Template IDs are scoped per Transport Session and Observation Domain, not per stream.
- Exporting Processes MAY use more restrictive selection rules as appropriate to meet application-specific requirements.
  - e.g. draft-claise-ipfix-per-stream

The Document

- Concise definition of new stream usage.
- Implementation guidelines for transitioning Collecting Process and Exporting Process implementations from stream restrictions as defined in IPFIX Protocol.
- Detailed changes to IPFIX Protocol document to define new stream usage.
  - Includes changes to other SCTP issues remaining in IPFIX Protocol: missing reference to SCTP Checksum Change, removal of mentions of “unreliable” SCTP transport.

The Future

- Keep scope of document small to facilitate quick adoption and completion:
  - This is not a general errata for everything we might want to change about the protocol;
  - nor is it an exploration of the entire space of stream usage possibilities;
  - however, we welcome input on other changes relevant to this scope.
- Adoption as a WG item and rapid IESG submission.
  - Assuming consensus today, to IESG by Vancouver.

Questions and Discussion