IPFIX Export per SCTP Stream

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<draft-claise-ipfix-export-per-sctp-stream-03.txt>

Benoit Claise, Paul Aitken, Andrew Johnson, Gerhard Muenz
Potential “Problems” with RFC5101

- Potential head of line blocking (but also network delay, re-ordering and packet loss) could imply that the data records in a different SCTP stream might arrive before the template records
  
  RFC5101: collector MAY store

- Potential head of line blocking (but also network delay, re-ordering and packet loss) could imply that data records are blocked and arrive after the template withdrawal message on another SCTP stream
  
  RFC5101: wait for 5 seconds
  
  Is 5 seconds enough? Don’t know. So we could be losing some data records.
Source of the problems

• Data records from the same template ID sent across different SCTP streams and/or template definition on one SCTP stream and data records on an other

• Or conversely, that templates are not scoped to the streams
Proposed Solution

- “Any Data Sets associated with a Template Record MUST be sent on the same stream on which the Template Record was sent”
  
  Limit the Template ID to a single SCTP stream
  
  Note that we don’t change the scope of Template IDs in RFC5101

- “All IPFIX Messages MUST be sent in order within a stream”

- “The Exporter MAY group related Templates and their associated Data Sets within a single stream so that the loss statistics are calculated for the group”
Advantages

- No risk that the Collecting Process discards Data Records while waiting for the Template Record to arrive
- No need to wait for 5 seconds to send the Template Withdrawal Message
- Template ID from a withdrawn Template MAY be reused immediately on the same stream
- Main advantage: data loss for each Template Record (or group) can be deduced
  
  From the Sequence Number in the IPFIX Message header (sequence counter of all IPFIX Data Records sent on this PR-SCTP stream)

- Backwards compatibility: per-stream exporter can still work with a non-per-stream collector.
Conclusion

• This specification offers some advantages
• We integrated the new solution discussed on the mailing list

• Any feedback?
• Working group item?