IPFIX Mediation: Problem Statement

draft-ietf-ipfix-mediators-problem-statement-04

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Status

WG Last Call for version -03 ended on June 5.
- Thank you to last call reviewers:
  - Gerhard Muenz
  - Juergen Schoenwaelder
  - Brian Trammell
  - Motonori Shindo
  - Benoit’s 3 co-workers reviewed in previous version(-02)
- Some reviewers said the draft is ready for next step.

Posted version -04
- Rewrote the terminologies section based on the mailing list discussion. But, it still need to consider some corner case.
- Resolved other issues.
Discussion Points in Terminologies

- What boundary between the problem statement and framework is?
  - Moved Intermediate Aggregation/Correlation/Anonymization/Selection Process to framework draft, because they indicate a specific Intermediate Process.

- IPFIX Concentrator, Proxy, Masq. Proxy, Distributor indicate devices, or functions?
  - Specific IPFIX Mediator as an IPFIX Device.

- Keep examples out of terminology.
  - Removed examples. All terminologies are improved based on Brian proposal.
Discussion Points in Terminologies

Does IPFIX Mediation cover “transport protocol mediation”?

- Relaying directly IPFIX Messages is not IPFIX Mediation.
  - UDP-to-UDP is not IPFIX Mediation.
  - Duplication and load balancing for entire IPFIX Messages are not IPFIX Mediation.
  - In IPFIX Distributor case, just passing through in configurable filtering functions may result in relaying IPFIX Messages. But, these configurable devices follow IPFIX Mediator specification.

- Manipulation of an IPFIX header is IPFIX Mediation.
  - Because ODID and Export Time are subsidiary information as “record” content.
    - General word "record" includes "Data Record", "(Options) Template Record", "Data Record associated Options Template", subsidiary information, and traffic data transmitted by other protocol.
Open issue

- Changing transport protocol “UDP” to “SCTP”
  - Needs some functions that manipulate IPFIX Messages.
    - In that case, when a Collecting Process detecting refresh timeout for a Template, Exporting Process should send Template Withdrawal Messages.
  - Does an IPFIX Mediator cover the function?
  - Does an Intermediate Process cover the function?
Open issue

- Does an IPFIX Mediator cover the function?
  - Yes. Because it is the manipulation of IPFIX Messages.

- Does an Intermediate Process cover the function?
  - Yes. Because it keeps state of template to transport the records.
  - Zero intermediate Process means not IPFIX Mediation.
  - Thus, “an IPFIX Mediator hosting zero or more Intermediate Process” should be replaced with “an IPFIX Mediator hosting one or more Intermediate Process”.

IPFIX Mediation

Old (-04)
- IPFIX Mediation is the manipulation and conversion of records for subsequent export using IPFIX, by applying mediation functions to a stream of records.
- Manipulation of records seem not include selection function.
- What is mediation function?

New
- IPFIX Mediation is the manipulation and conversion of a stream of records for subsequent export using IPFIX.
Intermediate Process

❖ Old (-04)

☐ An Intermediate Process takes a sequence of records from a Collecting Process, Metering Process, IPFIX File Reader, or another Intermediate Process; performs some transformation on these records based upon the content of the records themselves, keeps state across multiple records, configuration parameters, or other data; and passes a sequence of transformed records on to an Exporting Process, IPFIX File Writer, or another Intermediate Process. ...

→ Configuration parameters are covered in other data.

→ There is no description regarding IPFIX Mediation.

❖ New

☐ An Intermediate Process implements IPFIX Mediation functions. It takes a stream of records as its input from a Collecting Process, Metering Process, IPFIX File Reader, or another Intermediate Process; performs some transformation on these records, or makes some decision about their subsequent processing, based upon the content of each record, state maintained across multiple records, or other data sources; and passes a stream of transformed records as its output on to an Exporting Process, IPFIX File Writer, or another Intermediate Process. ...
IPFIX Mediator

❖ Old (-04)

- An IPFIX Mediator is an IPFIX Device that provides mediation capabilities by receiving records from some data source, hosting zero or more Intermediate Processes to transform those records, and exporting those records in IPFIX Messages via an Exporting Process. In the common case, an IPFIX Mediator receives records from a Collecting Process but could also receive records from data sources not encoded using IPFIX, e.g., in the case of NetFlow V9 protocol translation.

❖ New

- An IPFIX Mediator is an IPFIX Device that provides mediation capabilities by receiving records from some data source, hosting one or more Intermediate Processes to process those records, and exporting those records in IPFIX Messages via an Exporting Process. In the common case, an IPFIX Mediator receives records from a Collecting Process but could also receive records from data sources not encoded using IPFIX, e.g., in the case of NetFlow V9 protocol translation.
Other Comments in WG Last Call

- Needs stronger motivation in Introduction.
  - “There are no documents defining the IPFIX Mediation” is not motivation toward standardization.
  - Added the description elaborating from the abstract and improved.

- Some editorial issues.
  - IPFIX Flow Record/PSAMP Packet Reports ⇒ Data Record
  - Explain figure C. in section 6.5. “Template ID Management”.
  - Added the description and improved Figure C.
  - Doesn’t need the rule of non-key fields in Flow aggregation.
    - Gerhard pointed out that in RFC5102 their values are determined by the first packet observed for the corresponding Flow.
  - Removed this sentences.
Next Step

❖ Need to improve some editorial errors and open issues.
  □ After them, all issues will be resolved.
❖ Ready for IESG review after submitting next version.