RFC5101bis

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< draft-claise-ipfix-protocol-rfc5101bis-02>

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Errata + Editorial

- **Technical Errata ID: 1655, 2791**

- **Editorial Errata ID: 2814, 1818, 2792, 2888, 2889, 2890, 2891, 2892, 2903, 2761, 2763, 2764, 2852, 2857**

- **Section 8: "a new sampling rate" has been removed from the list of examples that requires a new Template**

- **New "IPFIX Document Overview"**

Technical Issue: Template Lifetime

- **Question: How does a collector determine the correct lifetime to associate with each Template, i.e. "the Template refresh timeout configured on the Exporting Process." ?**

  Not mentioned anywhere in RFC5101

  But mentioned in [IPFIX-CONF]: templateRefreshTimeout, optionsTemplateRefreshTimeout, templateRefreshPacket, optionsTemplateRefreshPacket

- **New sentence:**

  "Note that the frequency of the (Options) Template transmission can be monitored and configured with the templateRefreshTimeout and optionsTemplateRefreshTimeout in [IPFIX-CONF]."

  Consistent with the implementations guidelines RFC5153

Technical Issue: Specific Reporting Requirements

- **For:**

  - **4.1. The Metering Process Statistics Options Template**

  - **4.2. The Metering Process Reliability Statistics Options Template**

  - **4.3. The Exporting Process Reliability Statistics Options Template**

  - **4.4. The Flow Keys Options Template**

- **New sentence: "The Collecting Process MUST check the possible combinations of Information Elements within the Options Template Records to correctly interpret the following Options Templates."**

- **Clearly specify the scope fields**

Technical Issue: Specific Reporting Requirements

- **For:**

  4.2. The Metering Process Reliability Statistics Options Template

  4.3. The Exporting Process Reliability Statistics Options Template

- **Clarifed the time-related timestamps**

  Ex: flowStartMilliseconds -> observationTimeMilliseconds

Technical Issue: Specific Reporting Requirements

- **For:**

  4.2. The Metering Process Reliability Statistics Options Template

  4.3. The Exporting Process Reliability Statistics Options Template

- **New sentence: "Since the <4.2 | 4.3> Option Template will logically contain two identical timestamp Information Elements, and since the order of the Information Elements in the Template Records is not guaranteed, the Collecting Process MUST determine which is the oldest and the most recent timestamp in order the determine the right semantic behind the time first packet ignored and time last packet ignored Information Elements. Note that the counters wrap-around for the timestamps SHOULD also be taken into account."**

Technical Issue: Observation Domain

It is RECOMMENDED that this identifier also be unique per IPFIX Device. Collecting Processes SHOULD use the Transport Session and the Observation Domain ID field to separate different export streams originating from the same Exporting Process.
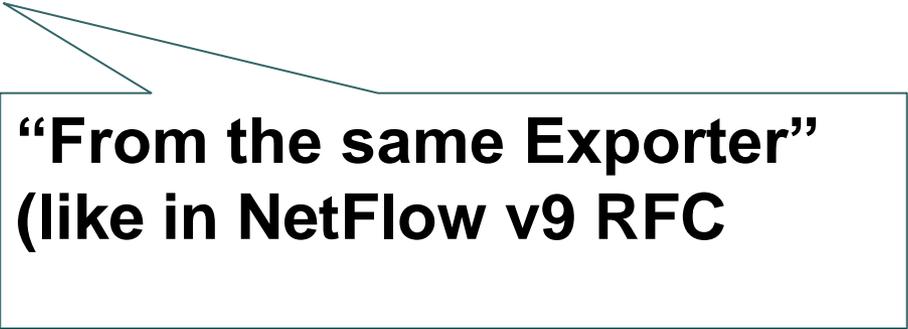
> **"From the same Exporter" (like in NetFlow v9 RFC**

See http://www.ietf.org/mail-archive/web/ipfix/current/msg06078.html (Paul Aitken)

Technical Issue: Timestamps

- **Clarified the timestamps and updated the reference from RFC1305 (NTPv3) to RFC5905 (NTPv4)**

- **Clear error: fixed the epoch for NTP micro and nanoseconds timestamps (left undefined). NTP era 0 epoch 1 Jan 1900**

- **Signedness of the UNIX epoch base timetamps were left undefined**

  Fixed by declaring them unsigned

Conclusion so Far

- **Please review all the changes**

- **Two open issues left**

Open Issue 1 Resolution to the template lifetime mechanism for UDP

- ## RFC5101, on the Collector:

    "If a Template is refreshed with a Template Record that differs from the previously received Template Record, the Collecting Process SHOULD log a warning and replace the previously received Template Record with the new one. The Template lifetime at the Collecting Process MUST be at least 3 times higher than the Template refresh timeout configured on the Exporting Process."

Open Issue 1 Resolution to the template lifetime mechanism for UDP

- **From RFC5655, on the collector:**

   "resolve any conflict between a resent definition and a previous definition by assuming that the new Template replaces the old, as consistent with Template expiration and ID reuse when using UDP at the IPFIX transport protocol;"

- **Note: MAY also use export time to sequence (Options) Template Records**

- **Note 1: no changes to the Exporter**

- **Note 2: interoperable with RFC5101 (relaxing restrictions)**

Open Issue 2

- **RFC2026 section 4.1.2: "The requirement for at least two independent and interoperable implementations applies to all of the options and features of the specification. In cases in which one or more options or features have not been demonstrated in at least two interoperable implementations, the specification may advance to the Draft Standard level only if those options or features are removed."**

Open Issue 2

- **The interop report from Prague is at http://www.ietf.org/proceedings/80/slides/ipfix-4.pdf**

- **Missing from this interop (and therefore, every interop):**

    1. **DTLS over SCTP or UDP (5101 sec. 11.1)**

Open Issue 2

- **Missing from this interop (and therefore, every interop):**

  2. **ANY advanced template handling, withdrawal, stream separation, or reuse UDP template expiration (5101 sec. 10.3.6) template withdrawals (5101 sec. 8 para 8 et seq.)**

     Simplified template management (as in open issue 1) still need to be interop-tested.

  3. **SCTP export on any stream other than 0 (5101 sec 10.2.4.3)**

Open Issue 2, What next?

1. **DTLS over SCTP or UDP**

2. **ANY advanced template handling**

3. **SCTP export on any stream other than 0**

- **Solution 1: We remove them**

    NO!

- **Solution 2: We "interop" those now**

    Who has been implementing them

    DTLS is THE problem

- **Solution 3: We wait for implementations**

    Blocks all charter documents