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Information Elements for Short Timer  
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Abstract

This document describes Information Elements related to short timer. They are used by the IP Flow Information Export (IPFIX) protocol for encoding timer parameters required for traffic measurement of volume change in a short time.

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## 1. Introduction

The IPFIX Information Model [RFC5102] defines an extensible list of Information Elements which may be transmitted by the IPFIX protocol [RFC5102].

This document lists a series of new Information Elements to update the IPFIX Information Model, and acts as the persistent publication medium requested in the IANA considerations section of the IPFIX Information Model [RFC5102] ("The specification of new IPFIX Information Elements MUST use the template specified in section 2.1 and MUST be published using a well established and persistent publication medium").

## 2. Terminology

IPFIX-specific terminology used in this document is defined in section 2 of the IPFIX Protocol [RFC5101]. As in the IPFIX Protocol [RFC5101], these IPFIX-specific terms have the first letter of a word capitalized when used in this document.

### 2.1. IPFIX Documents Overview

The IPFIX Protocol [RFC5101] provides network administrators with access to IP flow information.

The architecture for the export of measured IP flow information out of an IPFIX exporting process to a collecting process is defined in the IPFIX Architecture [RFC5470], per the requirements defined in RFC 3917 [RFC3917].

The IPFIX Architecture [RFC5470] specifies how IPFIX Data Records and Templates are carried via a congestion-aware transport protocol from IPFIX Exporting Processes to IPFIX Collecting Processes.

IPFIX has a formal description of IPFIX Information Elements, their name, type and additional semantic information, as specified in the IPFIX Information Model [RFC5102].

Finally the IPFIX Applicability Statement [RFC5472] describes what type of applications can use the IPFIX protocol and how they can use the information provided. It furthermore shows how the IPFIX framework relates to other architectures and frameworks.

## 2.2. PSAMP Documents Overview

The document "A Framework for Packet Selection and Reporting" [RFC5474], describes the PSAMP framework for network elements to select subsets of packets by statistical and other methods, and to export a stream of reports on the selected packets to a collector.

The set of packet selection techniques (sampling, filtering, and hashing) supported by PSAMP are described in "Sampling and Filtering Techniques for IP Packet Selection" [RFC5475].

The PSAMP protocol [RFC5476] specifies the export of packet information from a PSAMP Exporting Process to a PSAMP Collecting Process. Like IPFIX, PSAMP has a formal description of its information elements, their name, type and additional semantic information. The PSAMP information model is defined in [RFC5477].

Finally [I-D.ietf-ipfix-psamp-mib] describes the PSAMP Management Information Base.

## 3. Existing Information Elements

The following are existing Information Elements related to time stamp or time duration. Because one Application of IPFIX is QoS (Quality of service) monitoring, they support units smaller than seconds. For example, we can use observationTimeMilliseconds for delay measurements.

ID	Name	Units
21	flowEndSysUpTime	milliseconds
22	flowStartSysUpTime	milliseconds
36	flowActiveTimeout	seconds
37	flowIdleTimeout	seconds
150	flowStartSeconds	seconds
151	flowEndSeconds	seconds
152	flowStartMilliseconds	milliseconds
153	flowEndMilliseconds	milliseconds
154	flowStartMicroseconds	microseconds
155	flowEndMicroseconds	microseconds
156	flowStartNanoseconds	nanoseconds
157	flowEndNanoseconds	nanoseconds
158	flowStartDeltaMicroseconds	microseconds
159	flowEndDeltaMicroseconds	microseconds
160	systemInitTimeMilliseconds	milliseconds
161	flowDurationMilliseconds	milliseconds
162	flowDurationMicroseconds	microseconds
258	collectionTimeMilliseconds	milliseconds
260	maxExportSeconds	seconds
261	maxFlowEndSeconds	seconds
264	minExportSeconds	seconds
265	minFlowStartSeconds	seconds
268	maxFlowEndMicroseconds	microseconds
269	maxFlowEndMilliseconds	milliseconds
270	maxFlowEndNanoseconds	nanoseconds
271	minFlowStartMicroseconds	microseconds
272	minFlowStartMilliseconds	milliseconds
273	minFlowStartNanoseconds	nanoseconds
305	samplingTimeInterval	microseconds
306	samplingTimeSpace	microseconds
322	observationTimeSeconds	seconds
323	observationTimeMilliseconds	milliseconds
324	observationTimeMicroseconds	microseconds
325	observationTimeNanoseconds	nanoseconds

According to a diversification of multimedia application and an aggregation of server in data center, we are facing to measure bursty traffic that causes packets loss and delay jitter. In order to measure bursty traffic with IPFIX/PSAMP, timers shorter than one second are required.

#### 4. New Information Elements

The following Information Elements are necessary for enabling the IPFIX/PSAMP traffic measurement of volume change in a short time.

ID	Name	Units
TBD1	flowActiveTimeoutMilliseconds	milliseconds
TBD2	flowIdleTimeoutMilliseconds	milliseconds

##### 4.1. flowActiveTimeoutMilliseconds

Description:

The number of milliseconds after which an active Flow is timed out anyway, even if there is still a continuous flow of packets.

Abstract Data Type: unsigned16

ElementId: TBD1

Status: current

Units: milliseconds

##### 4.2. flowIdleTimeoutMilliseconds

Description:

A Flow is considered to be timed out if no packets belonging to the Flow have been observed for the number of seconds specified by this field.

Abstract Data Type: unsigned16

ElementId: TBD1

Status: current

Units: milliseconds

#### 5. Security Considerations

The recommendations in this document do not introduce any additional

security issues to those already mentioned in [RFC5101] and [RFC5477].

## 6. IANA Considerations

This document requires an ElementId assignment to be made by IANA.

## 7. References

### 7.1. Normative References

### 7.2. Informative References

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