

# **PSAMP Protocol Specifications**

**PSAMP IETF-60 August 3, 2004**

**<draft-ietf-psamp-protocol-01.txt>**

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# What's New?

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- **Seoul meeting minutes:**  
“The remaining three documents all depend on the IPFIX protocol and information model, which are still under development. Therefore progress there is slow, just IPFIX-independent issues are progressing”
- **Not much visible progress (no new PSAMP protocol specification draft) because the problems are being solved in the IPFIX protocol draft**

# IPFIX Protocol Latest News

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- **Note: put the PSAMP meeting after IPFIX next time ;)**
- **IPFIX protocol specification draft: " The IPFIX protocol supports packet sampling. The methods of metering packet samples are out of the scope of this specification."**
- **Reduced number of FlowSet: removed the IETF Exclusive Template FlowSet and IETF Exclusive Options Template FlowSet**

# IPFIX Protocol Latest News

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- **How to distinguish IETF field IDs from vendor field IDs: the Enterprise Field Type**
- **“SCTP [RFC2960] and SCTP-PR [RFC3758] MUST be implemented by all compliant implementations.  
UDP [UDP] MAY also be implemented by compliant implementations.  
TCP [TCP] MAY also be implemented by compliant implementations.”**

# Sampling Case Example

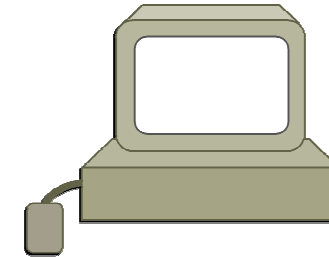
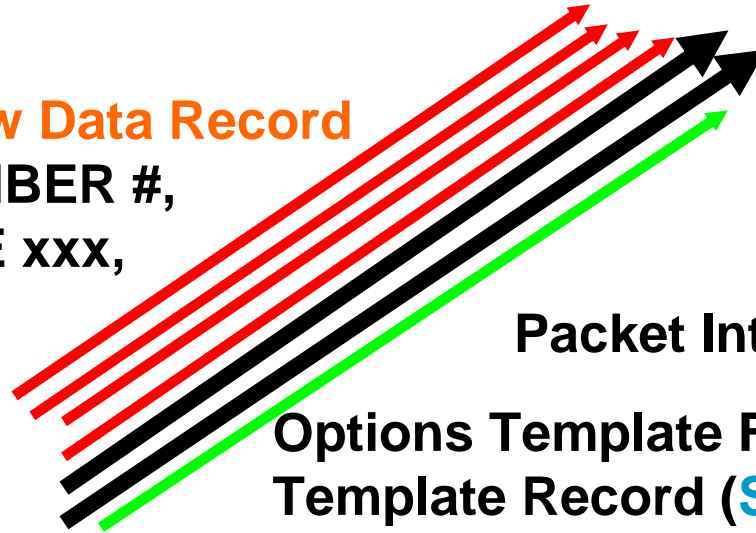
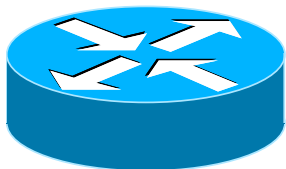
## PSAMP Base Level of Functionality

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Packet Report:

Template FlowSet: Template Record  
(SEQUENCE\_NUMBER, PACKET\_SAMPLE,  
SELECTOR\_ID)

Data FlowSet: **Flow Data Record**  
(SEQUENCE\_NUMBER #,  
PACKET\_SAMPLE xxx,  
SELECTOR\_ID 1)



Packet Interpretation:

Options Template FlowSet: Options  
Template Record (Scope=SELECTOR\_ID,  
SAMPLING\_ALGO, SAMPLING PARAM,  
OBSERVATION POINT)

Data FlowSet: **Options Data Record**  
(Scope=SELECTOR\_ID 1, systematic  
sampling, 1/100, ifIndex 3)

# Open Issues

## Scope -> Proposal

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- **Scope: 1= System, 2=Interface, 3=Line Card, 4=Cache, 5=Template**  
**Information Elements: draft-ietf-ipfix-info-04.txt**
- **Proposal: use the information elements for the scope as well**
- **The advantages are:**
  - **no need for IANA to maintain 2 lists, potentially similar ones**
  - **no need to have a separate mechanism for proprietary scope; we could reuse the same mechanism of "enterprise field type" for proprietary Information Elements**

# Interface Scope Example

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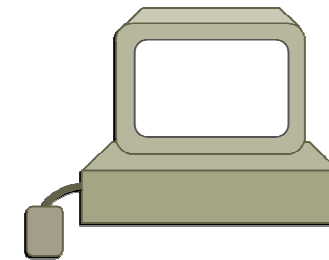
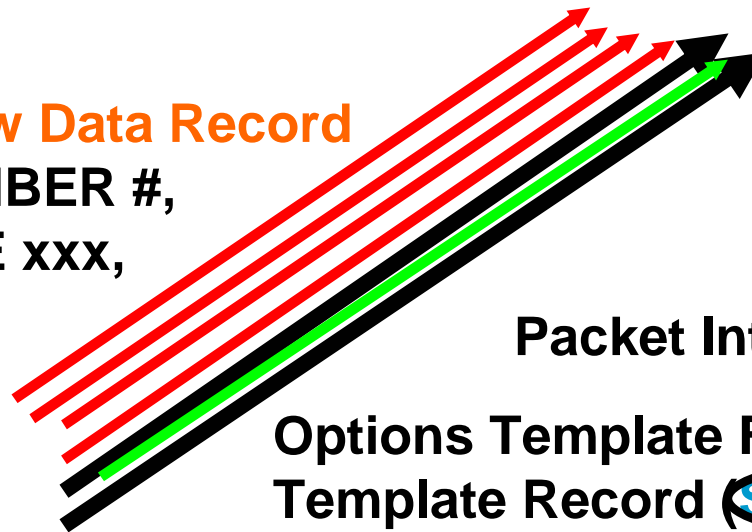
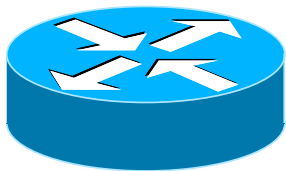
Packet Report:

Template FlowSet: Template Record

(SEQUENCE\_NUMBER, PACKET\_SAMPLE,  
INTERFACE)

Data FlowSet: Flow Data Record

(SEQUENCE\_NUMBER #,  
PACKET\_SAMPLE xxx,  
ifIndex 3)



Packet Interpretation:

Options Template FlowSet: Options

Template Record (Scope=Interface (2),  
SAMPLING\_ALGO, SAMPLING\_PARAM,)

Data FlowSet: Options Data Record

(Scope=ifIndex 3, systematic sampling, 1/100,)

Advantage: the collecting process job, easier as it can link easily the information element in the Flow Data Records with the information element in the Options Data Records.

# Open Issues

## Scope -> Proposal

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- What if there is filtering first, then sampling?
- The principles:
  - if multiple scopes are used, they are treated as logical AND.  
example: scope = line card1, scope = cache2
  - “if the order of the fields in the Option Template is relevant, the order of the fields is used”
- With these principles, “Sampling and Filtering Techniques for IP Packet Selection” can be implemented with both the IPFIX protocol and the IPFIX/PSAMP information model. Even the composite Selector\_ID
- Only modifications to the Options Template FlowSet and Options Data Record.
- Propose the change directly in the IPFIX protocol draft
- Feedback?



# To Be Done

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- **Cut and Paste the terminology section from [IPFIX-PROTO]**
- **Sampling and Filtering examples:**
  - Must clearly define the sampling examples**
  - Must have a filtering example**
  - Double check the examples with the information model elements. Example: Selector ID, packet-sample, sampling-algorithm, hash-value, etc...**
- **Describe the packet fragment encoding with the variable length data type**
- **IANA considerations and time synchronization references to IPFIX**

# To Be Done

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- **A new section about the terminology comparison between [PSAMP-PROTO] (hence [IPFIX-PROTO]) and [PSAMP-FRAMEWORK]**
  - **Flow Data Records sent in Data FlowSet = packet report in [PSAMP-FRAMEWORK]**
  - **Options Data Record sent in Data FlowSet = packet interpretation in [PSAMP-FRAMEWORK]**
  - **Exporting Process in IPFIX = Reporting Process in [PSAMP-FRAMEWORK]**
- **Extend security considerations by a discussion on exported Payload**
- **A way to distinguish an IPFIX Flow Record export with one packet from a PSAMP export**
- **Any others?**

# **PSAMP Protocol Draft**

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**Any feedback?**

**Thank you**

**Feel free to contribute!**