



IETF Hackathon - IPFIX On-Path Telemetry with SRv6

**IETF 118
4–5 November 2023
Prague, Czech Republic**



Hackathon Plan

- **Collect hop-by-hop delay of from SRv6 nodes using following I-D/RFCs:**
 - **IPFIX IEs of SRv6 SRH** ([draft-ietf-opsawg-ipfix-srv6-srh](#)): Implemented in IETF 117 hackathon
 - **IPFIX IEs of On-Path Delay** ([draft-opsawg-ipfix-on-path-telemetry](#))
 - **IOAM Timestamp** ([RFC 9197](#))
- **Goal: delay collection with IPFIX in SRv6 network with Linux Router**
 - Implement IEs to [Fluvia Exporter](#), an IPFIX exporter with eBPF/XDP
 - Implement additional [Wireshark](#) dissectors

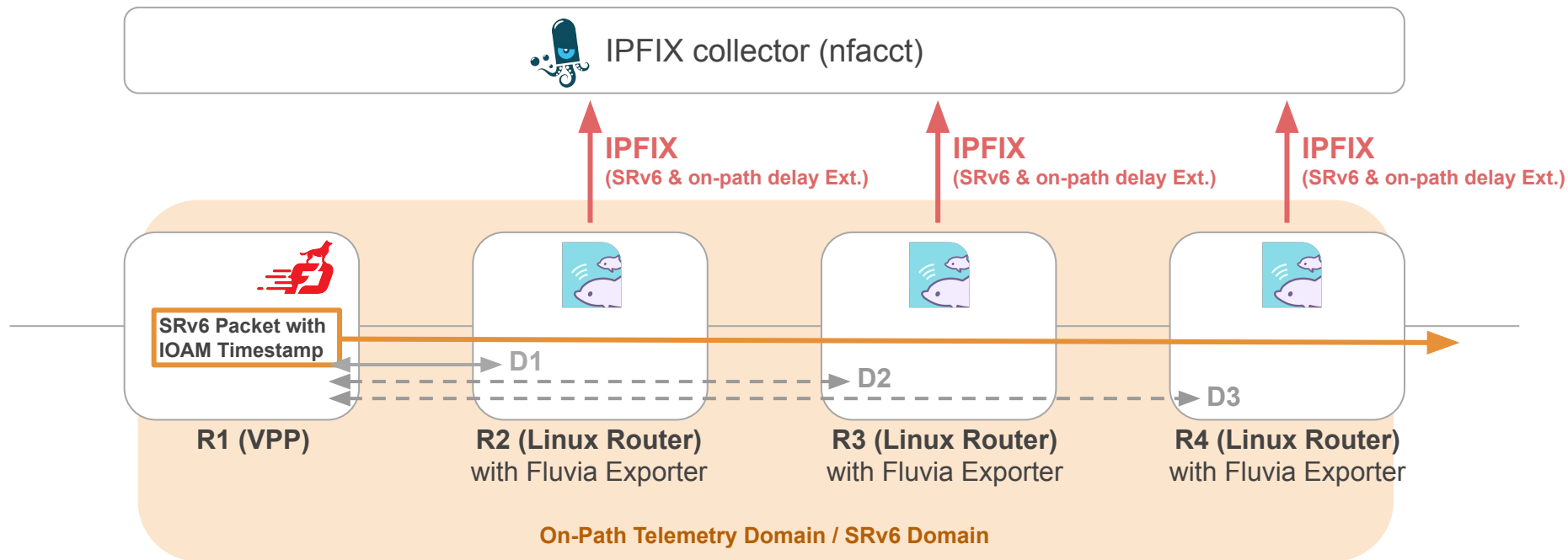
What got done

- **Fluvia Exporter:**
 - **COMPLETED:** Decode the IOAM timestamp with eBPF/XDP
 - [RFC 9197](#)
 - **COMPLETED:** Export the on-path delay & SRv6 SRH information with IPFIX
 - [draft-ietf-opsawg-ipfix-on-path-telemetry-04](#)
 - Interoperability test was succeeded with **nfacct** and following Wireshark dissector
- **Wireshark:**
 - **COMPLETED:** IPFIX IEs for on-path telemetry
 - [draft-ietf-opsawg-ipfix-on-path-telemetry-04](#)
 - **TODO:** IOAM timestamp format
 - [RFC 9197, draft-ahuang-ippm-dex-timestamp-ext](#)



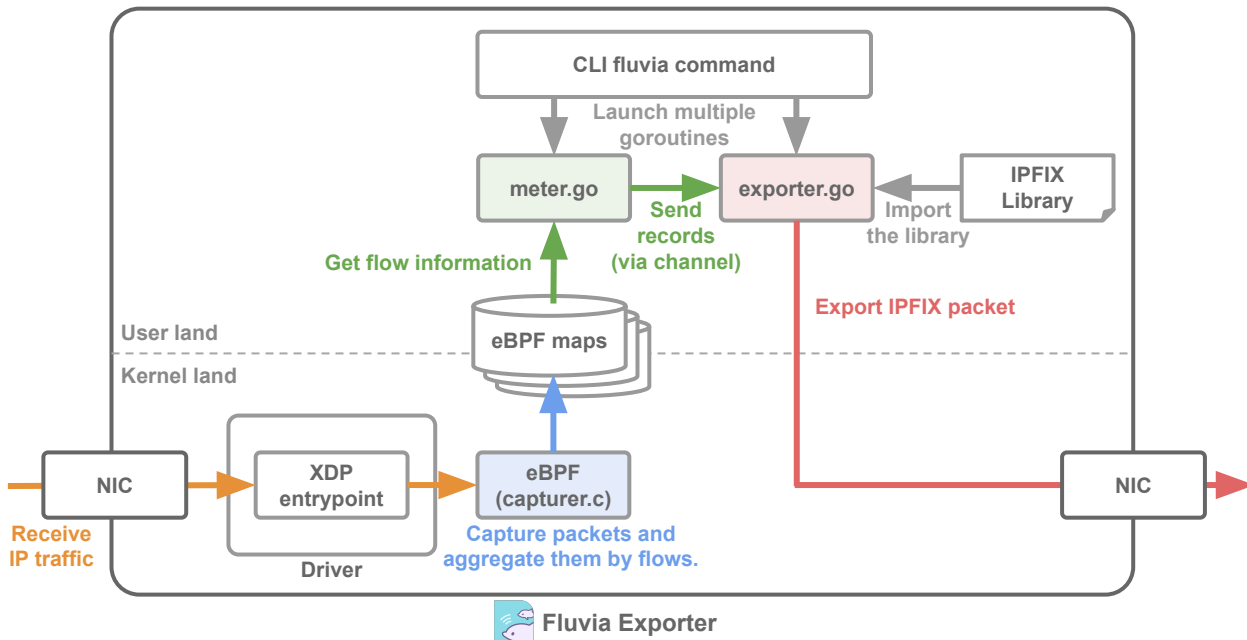
Fluvia Exporter

<https://github.com/nttcom/fluvia>



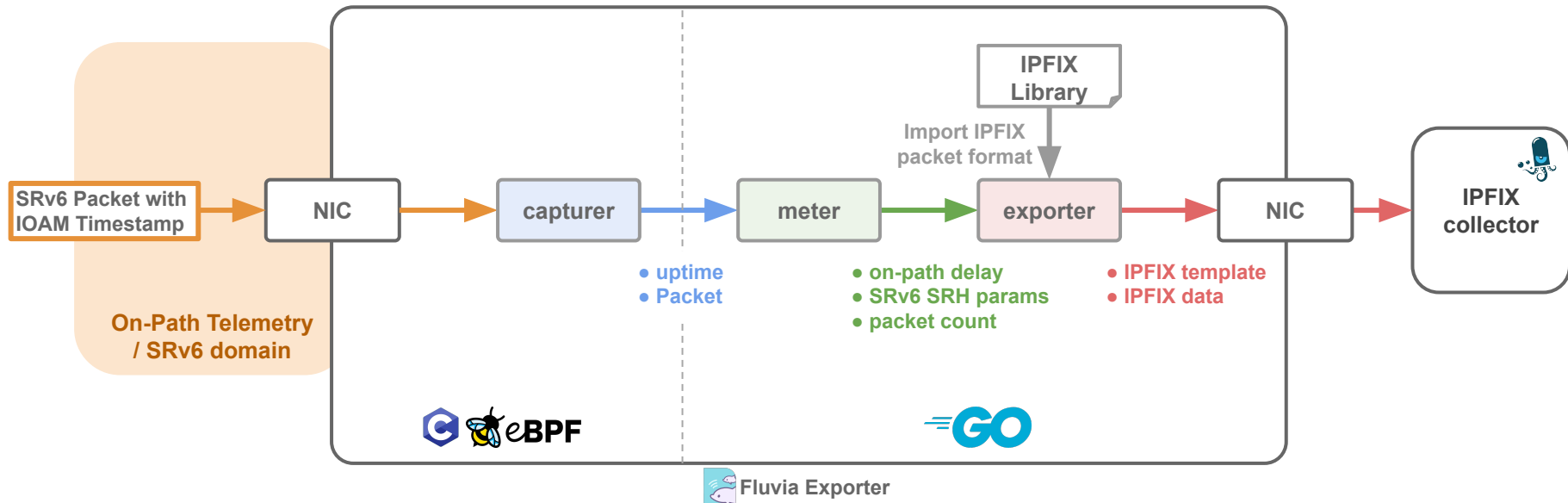
Fluvia Exporter Architecture

- eBPF/XDP based Linux IPFIX exporter
- comprises 3 components (capturer, meter, exporter)

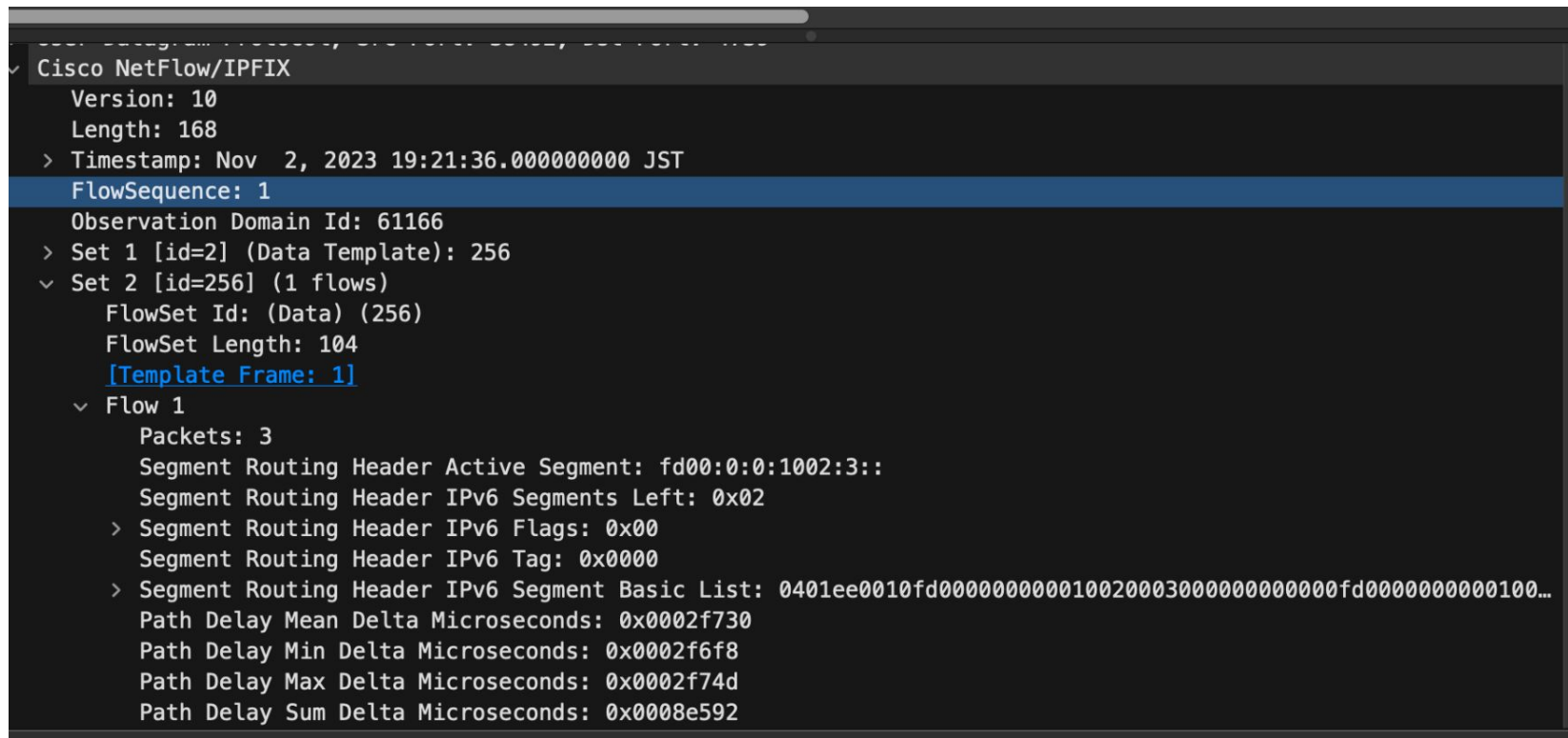


On-Path Telemetry Pipeline

- **capturer**: collect IOAM timestamp and timestamp of when the packet was arrived
- **meter**: calculate the delay from each timestamp, parse the SRv6 SRH
- **exporter**: generate IPFIX packet, and send to a collector



WireShark Dissector



Wrap-up / Our Code

- **Fluvia Exporter:**
 - <https://github.com/nttcom/fluvia/pull/21>
- **Wireshark Dissector:**
 - https://gitlab.com/udon-yuya/wireshark/-/compare/master..feature%2Fipfix-on-path-delay-dissector?from_project_id=7898047

Members

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