SRv6
# On-Path Delay Measurement with Anomaly Detection
OPSAWG WG

IETF 116
March 25-26th, 2023
Hackathon

Hackathon - Plan

- Establish multivendor SRv6 network topology with network telemetry data collection and data processing pipeline.

- Validate and visualize two IPFIX implementations of draft-ietf-opsawg-ipfix-srv6-srh (AD review) and draft-ietf-opsawg-ipfix-on-path-telemetry in FD.io VPP and on Huawei VRP.

- Calculate PathDelayMeanDeltaMicroseconds by dividing PathDelaySumDeltaMicroseconds by packetDeltaCount in pmacct data collection

- Extend Network Anomaly Detection to recognize on-path delay increase and include delay in Max Concern Score calculation.
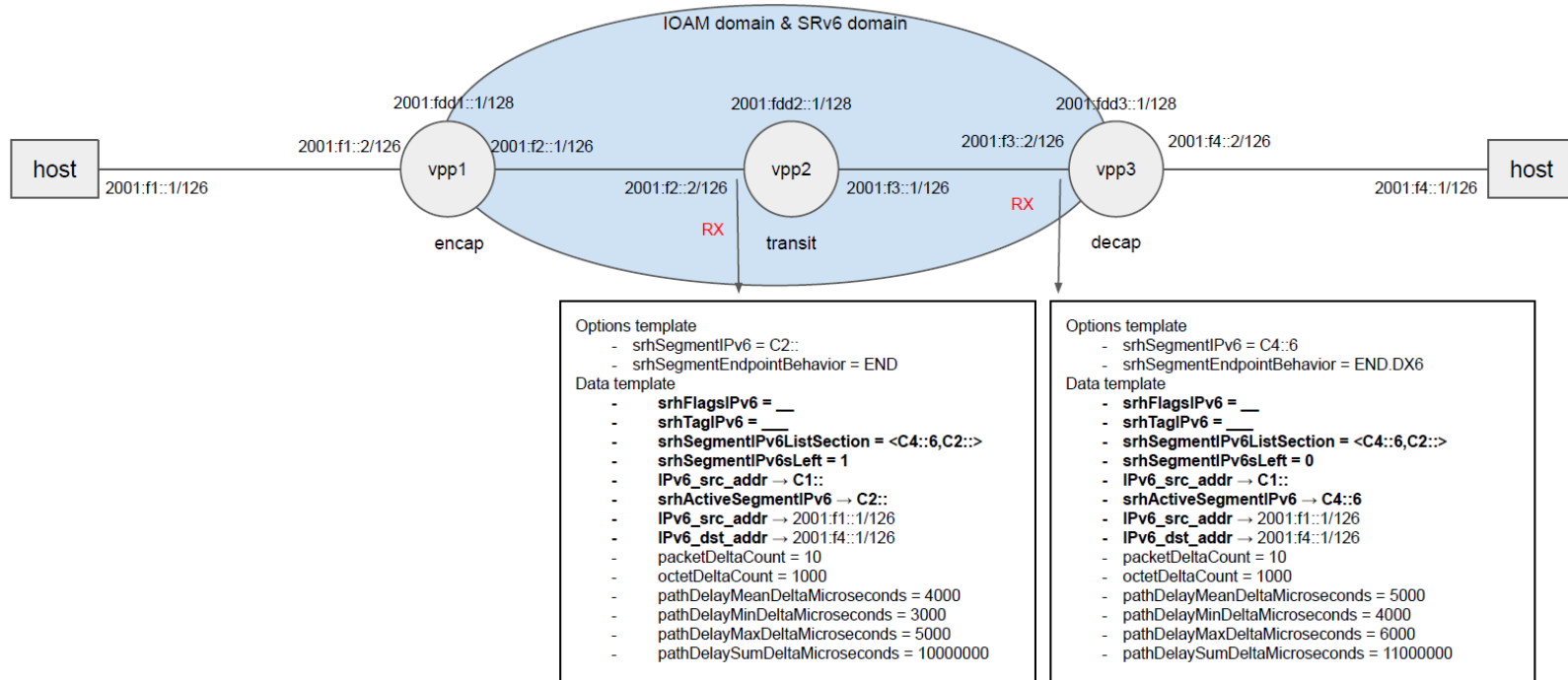
Hackathon – Network (1/2)
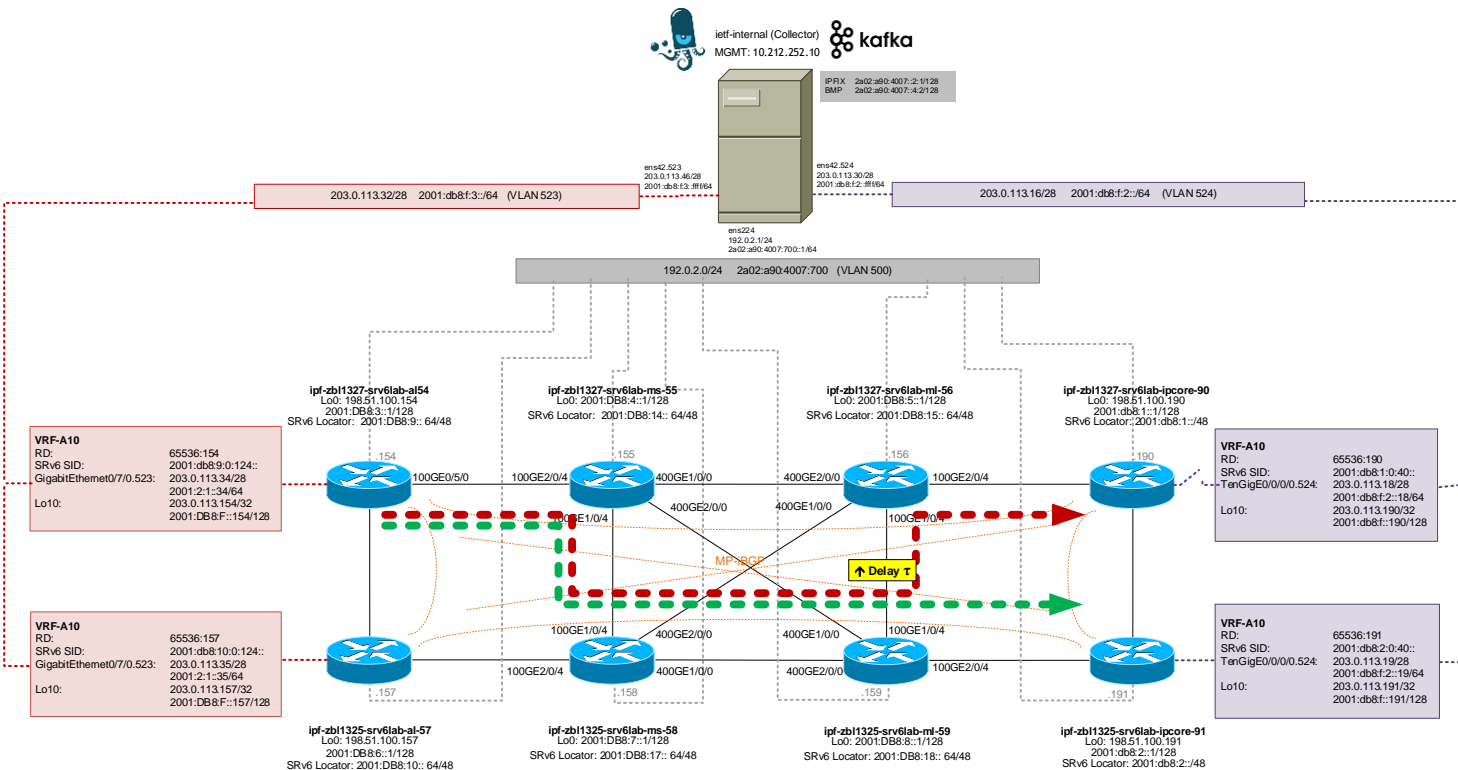
SRv6 network topology with two vendors and IPFIX data processing pipeline.

Huawei with four P and two PE nodes exposing SRH provider data-plane [draft-ietf-opsawg-ipfix-srv6-srh](#) and on-path delay as described in [draft-ietf-opsawg-ipfix-on-path-telemetry](#).

Cisco with two PE nodes exposing customer data-plane.

Hackathon – Network (2/2)

- FD.io VPP Open Source Code published: https://github.com/network-analytics/vpp-srh-onpath-telemetry

Visualization & Conclusion

(1) Shows **SRv6 SID list change** of the traffic engineered paths.

(2) Shows **on which node how much on-path delay** was being measured.

(3) Shows the **BGP update/withdrawals** from the **topology change**.

(4) Shows that **Network Anomaly Detection detects the topology and delay change** and the Max Concern Score calculation**.**
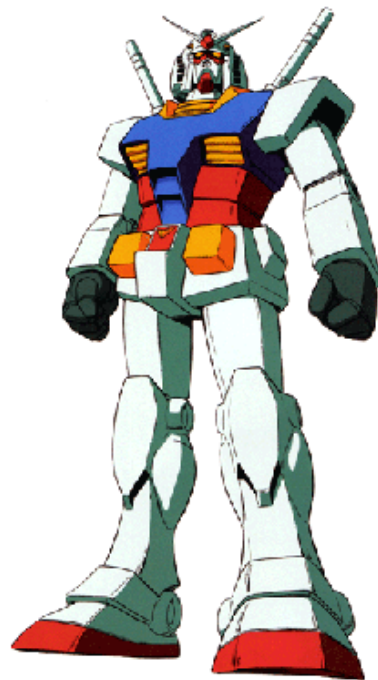
What we learned (again)

- Good
  - Preparation and good team setup is gold.
 - As always… the beers were most welcome!
- Surprise
  - Yuta and his colleagues joining our table and implementing draft-ietf-opsawg-ipfix-srv6-srh in XDP/DPDK.

Thanks to…

- Alex Huang Feng – INSA
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- Olga Havel – Huawei
- Wanting Du – Swisscom (remote)
- Yannick Buchs – Swisscom (remote)
- Marco Tollini - Swisscom
- Thomas Graf - Swisscom
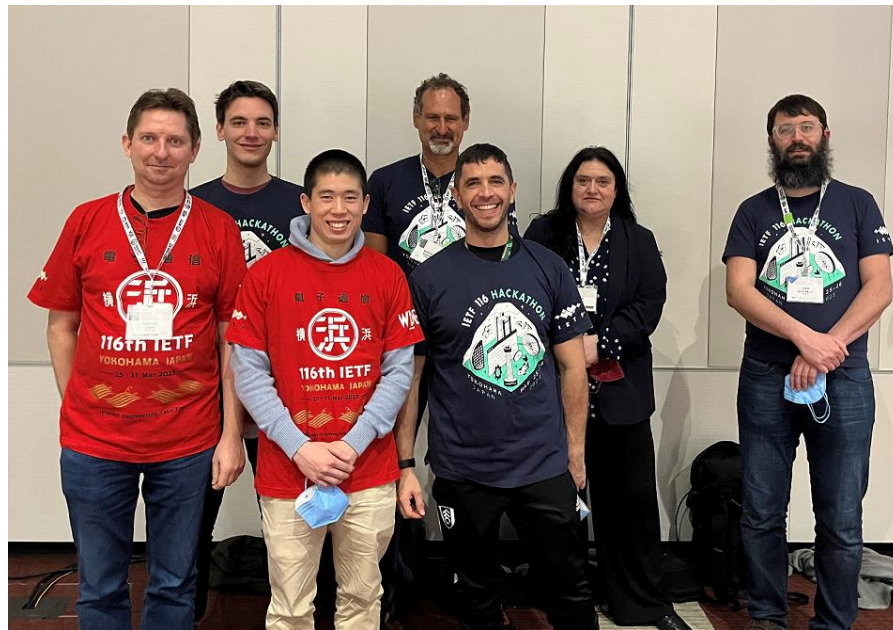
….and Huawei, INSA Lyon and Pmacct for the network environment, software and test cases.