



QUIC measurements spindump IETF Hackathon

**IETF 108
July 20-24, 2020
Online**

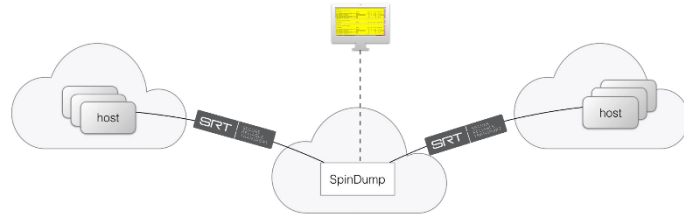


QUIC Measurements: Goals

- Provide tools and ideas for traffic measurement in the era of encrypted transports
 - Debugging
 - Research
 - Network health monitoring
 - Optimization and network management adjustment
- Updates to the spindump tool github.com/EricssonResearch/spindump

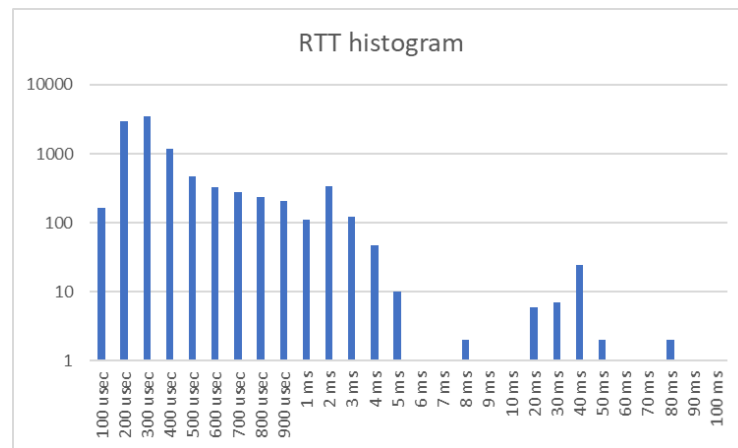
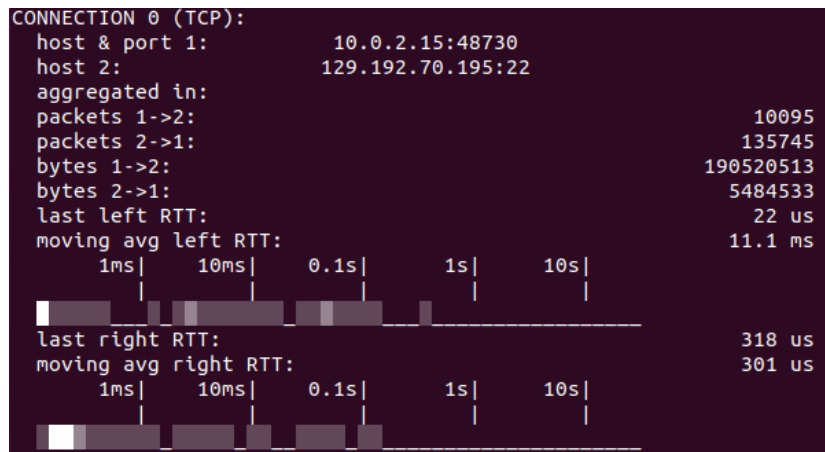
What got done

- Traffic classification
 - What % of my traffic goes to FB etc?
- Model generation for simulation
- Giving the power for observations to clients
 - Per-UE measurement agents ([HotRFC-Presentation](#))
- Measuring SRT ([draft-sharabayko-mops-srt](#))
- Qlog ([draft-marx-qlog-main-schema](#))
 - Write a converter for netlog->qlog
- Explicit packet loss measurement ([draft-cfb-ippm-spinbit-measurements](#))
 - Using sSquare bit (Q-bit) and Reflection square bit (R-bit)
- Maintenance, new versions
 - Fixes for OSs (Ubuntu 20.04, MacOS)
 - Use ideas from QUIC, add support in tools



Model generation

- Connection statistics – RTT histogram (logarithmic histogram)



Measuring SRT | Haivision

During the hackathon:

- Getting familiar with the tool
- Submitting [PR 213](#) to address minor issues while building on MacOS
- Next step will be to learn the code and architecture better, and to estimate an effort required to add the SRT protocol support in spindump

For more info:

- SRT RFC Draft Proposal
<https://datatracker.ietf.org/doc/draft-sharabayko-mops-srt/>
- SRT Technical Overview
https://github.com/Haivision/srt/files/2489142/SRT_Protocol_TechnicalOverview_DRAFT_2018-10-17.pdf
- SRT Open-source Library
<https://github.com/Haivision/srt>
- SRT Alliance
<https://www.srtalliance.org/>
- SRT Slack Channel
<https://srtalliance.slack.com/>



Enabling low-latency video contribution & distribution and fast file transfer over unpredictable networks.

Explicit packet loss measurement

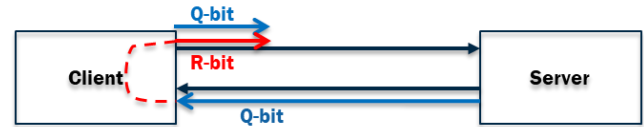
During the hackathon:

- Implementation of the observer inside Spindump
- Testing of the methodology using quic-go to generate traffic
- Next step: comparison with other explicit packet loss methodologies

For more info:

- Explicit measurements IPPM draft
<https://tools.ietf.org/html/draft-cfb-ippm-spinbit-measurements-02>
- QR-bits quic-go implementation
<https://github.com/fabiobulgarella/quic-go/tree/tim-pl2-qr>

The Client generates the Q-bit signal and reflects the received Q-bit signal using the R-bit signal:



The Server does the same in the opposite direction.



The sizes of the generated R-bit blocks are the **“average sizes”** of the received Q-bit blocks.

Wrap Up

Team members:

Mauro Cociglio (Telecom Italia - TIM)

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Maxim Sharabayko (Haivision)

Szilveszter Nadas (Ericsson)

Ferenc Fejes (Ericsson)

Mirja Kühlewind (Ericsson)

Jari Arkko (Ericsson, driver)

+ few other interested ones, on vacation or busy this week

[github.com/EricssonResearch/
spindump](https://github.com/EricssonResearch/spindump)