IETF Hackathon: Low Loss, Low Latency, Scalable Throughput (L4S)

- IETF 104
- 23-24 March, 2019
- Prague

large saw teeth can ruin the quality of your experience

Hackathon Plan

- Low Loss, Low Latency, Scalable Throughput (L4S) https://riteproject.eu/dctth

  - RFC8257 (DCTCP)
  - RFC8311 (ECN Experimentation)
  - draft-ietf-tsvwg-l4s-arch
  - draft-ietf-tcpm-accurate-ecn
  - draft-ietf-tsvwg-aqm-dualq-coupled
  - draft-ietf-tsvwg-l4s-id

Hackathon Plan

- Low Loss, Low Latency, Scalable Throughput (L4S) https://riteproject.eu/dctth

  - RFC8257 (DCTCP) — **Linux v4.1 (2012)**
  - RFC8311 (ECN Experimentation) — **2018**
  - draft-ietf-tsvwg-l4s-arch — **2017**
  - draft-ietf-tcpm-accurate-ecn — **Prototyped on Linux 4.17**
  - draft-ietf-tsvwg-aqm-dualq-coupled — **RITE prototype in 2016**
  - draft-ietf-tsvwg-l4s-id — **Requirements written in 2015**

What got done

- Kickstarting a FOSS e2e experiment environment
  - VM + labs illustrating how to use all pieces
  - AccECN updated & ported to 5.1-rc1/net-next + experimental GRO/GSO fixes
  - Prague req. for TCP WIP (DCTCP fork)
  - “QUIC Prague” WIP (based on pico-quic)

What we learned

- AccECN has subtle interactions with GRO/GSO
- Not all Prague requirements might be needed
- QUIC has an easier path to support them
- Coupling LL-CC and stream scheduling looks promising in QUIC

Wrap Up

Team members:

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https://riteproject.eu/dctth/#code

https://github.com/L4STeam