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
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Linux v4.1 (2012)
2018
2017
Prototyped on Linux 4.17
RITE prototype in 2016
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:

Bob Briscoe (Independent)
David Lebrun (Google)
Mathieu Jadin (UCLouvain)
Quentin De Coninck (UCLouvain)
Olivier Tilmans (Nokia Bell Labs)

https://riteproject.eu/dctth/#code
https://github.com/L4STeam