IETF-106 Hackathon

Low Loss
Low Latency
Scalable throughput
L4S

16-17 Nov 2019, Singapore

L4S Background

- Low Loss Low Latency Scalable throughput
- Pre-existing L4S code via: https://riteproject.eu/dctth/#code
  - DualPI2 Linux qdisc
  - BBRv2
  - DCTCP
  - TCP Prague
  - Accurate ECN
- Specs via https://riteproject.eu/dctth/#stds-specs:
  - RFC8257 (DCTCP)
  - RFC8311 (ECN Experimentation)
  - draft-ietf-tsvwg-l4s-arch (architecture)
  - draft-ietf-tsvwg-aqm-dualq-coupled (coupled AQMs)
  - draft-ietf-tsvwg-ecn-l4s-id (L4S-ECN identifier)
  - draft-ietf-tcpm-accurate-ecn (TCP ECN feedback)

People & Projects

Olivier Tilmans (remote)	testbed interop: TCP Prague v BBRv2
Bob Briscoe	The management
Richard Scheffenegger	FreeBSD Accurate ECN implementation
Ilpo Järvinen	Accurate ECN TCP feedback: upstream prep
Asad Ahmed	TCP Prague Classic ECN fallback
Tom Henderson (remote)	ns3 L4S Coupled DualQ – update to draft-10
Mohit Tahiliani (remote)	ns3 DCTCP and ECN
Vivek Jain (remote)	ns3 DCTCP and ECN
Joakim Misund (remote)	ns3 TCP Prague adding paced chirping

What got achieved

- Newbie build of testbed, to verify README
- TCP Prague v BBRv2: ran through full test regime
- Accurate ECN TCP feedback
  - Linux code review, sequencing patches for upstreaming
  - how to add a new feedback mechanism
- ns-3 L4S implementation
  - Fast-start (paced chirping) added to TCP Prague implementation - running
  - Updating DualQ Coupled AQM implementation to draft-10 (in progress)
  - ECN configuration code aligned to Linux, to support DCTCP merge to mainline

What we learned

- Missing steps in README for setting up L4S testbed
- AccECN TCP feedback
  - more flexible than it appears
- ns-3
  - hackathon is a useful event to get code done