

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
Ilpo Järvinen	Accurate ECN TCP feedback: upstream prep
Asad Ahmed	TCP Prague Testbed for Classic ECN fallback
Tom Henderson (remote)	ns3 L4S Coupled DualQ – update to draft-10
Mohit Tahilini (remote)	ns3 DCTCP maintenance
Vivek Jain (remote)	ns3 AccECN & ECN++ maintenance
Viyom Mittal (remote)	ns3 DCTCP maintenance
Ankit Deepak (remote)	ns3 DualPI2 & PI2 maintenance
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
 - Updated DualQ Coupled AQM implementation to draft-10
 - Cleanup of public DCTCP, AccECN and ECN++ implementations
 - DCTCP & ECN config code
 - see https://www.nsnam.org/wiki/Sprints#Results_of_past_sprints

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