QUIC in space

IETF Hackathon

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Rationale and Plan

- Revisiting the possibility of using IP in space. Space agencies planning to use IP on Moon and planetary bodies(aka Mars). QUIC (compared to TCP) is a good candidate for space
    - Space communications characteristics:
        - Looong delays (from seconds, to minutes, to hours: aka Mars is ~4-20 minutes one-way delay)
        - Disrupted communications (scheduled and planned windows of possible communications, e.g. orbital mechanics)
- QUIC stacks have various assumptions (mostly default constants) that are not suited for this space use case.
- POC on one stack provided pretty good results in relatively small changes.
- Plan: modify QUIC stacks to be suitable for space, test environment with delays, learn lessons. Write some documentation/draft on findings.

What got done/learned

- Discussed (a lot) the overall idea!
  - Most people came for understanding what we were doing, they were curious about it.
  - Most time spent on having very good technical discussions on the problem/solution space (not only transport but other facets of IP in space). A lot of learning.
- Most QUIC implementers were with the other tables… for more immediate useful work (Multipath QUIC, …). Not taking it personally ;-)
- Got some time to modify one stack but still not fully done.

Wrap Up

Thanks to all that came or discussed or helped or offered help:

- Ronald in't Velt
- Joerg Ott
- Erik Nordmark
- Philip Reiser
- Emile Stephan
- Christian Huitema
- Ben Saunders
- Charles Eckel
- Dave Taht
- And others I'm forgetting. Sorry.

Contact:
Marc Blanchet <marc.blanchet@viagenie.ca>
Christian Huitema <huitema@huitema.net>