Implementing QUIC for fun and planning

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Why implementing QUIC

- Like the general design
  - Transport over encryption
  - All kinds of transport algorithm improvements
  - Obvious potential
- Implement from spec (internet drafts) not code
  - Forced lots of discussion in QUIC Forum
  - Developed extensive set of tests
- Evaluate whether/how to ship in Windows
  - Depends on demand from applications, availability of standard
  - Would enable code update through Windows Update

Update from July 2015

- QUIC specification is getting simpler
  - Removal of FEC, No more entropy, simpler ACK
  - Updated prototype to the new spec – removed a lot of complexity
- Agreement on embedding TLS 1.3
  - Removes a major risk factor, only one stack to worry about
- This BOF, the proposed charter

QUIC versus TCP/TLS

- TCP and TLS have improved
  - RACK, TLP, TFO, TLS 1.3, 0-RTT
  - Performance probably similar to current QUIC
- Arguments for QUIC
  - Rapid innovation
  - Features like FEC, Partial Delivery that are really hard in TCP
  - Work on many platforms

Next steps

- Interoperability tests with basic spec, TLS 1.3
  - Best way to verify that the spec is good!
- Design of extensibility feature
  - Target distributed innovation
- Design of QUIC multipath
  - With special emphasis on privacy issues!
- Performance tests
  - Evaluate cost/benefits of QUIC vs "modern" TCP+TLS in realistic benchmark