First Step: IETF Invariants

In London, IETF 101, Invariants were adopted

Provided a guarantee part of QUIC was stable

Chrome implements the Invariants in QUIC v44*

Public header, including asymmetric CIDv, VN

Stateless Reset replaces Public Reset

*True varlen CIDv are not yet supported
Deployment Status: In Chrome

Canary: Enabled for all QUIC users

Dev: Enabled for all QUIC users

Beta: Experiment running for >1 month

Stable: Experiment running for ~1 week
The Good :)

Contacted the middlebox vendor whose QUIC identification caused issues before

They’ve developed a fix for v44 and deployed it!

No reports of users visible issues
The Bad :(  

Rate of handshake timeouts has increased  

Number of Stateless Resets << gQUIC Public Resets  

Small, but significant regressions in user metrics  

Theory: Some failed handshakes aren’t being closed
What’s next?

Fix handshake timeouts ASAP

If draft-17 becomes a deployment draft, Ship It!
Takeaways

Supporting IETF QUIC and gQUIC simultaneously is complex

If you don’t have to do it, don’t...

Detailed client and server metrics are critical for debugging hard to repro issues

No obvious signs of middlebox issues with IETF invariants