The Future With QUIC

Jana Iyengar

Fastly
Agenda

1. What is QUIC?

2. What is QUIC's immediate value proposition?

3. What does QUIC enable?
1. **What is QUIC?**
   A short primer on QUIC

2. **What is QUIC's immediate value proposition?**
   How did we get the world interested in QUIC?

3. **What does QUIC enable?**
   What was the real goal of getting QUIC deployed?
Who am I?

Jana Iyengar

VP, Infrastructure and Network Services, Fastly
Editor of IETF QUIC specs
Chair of IRTF Internet Congestion Control research group
Working on transport since ~2000, on QUIC for 9 years
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QUIC

• Is a new transport protocol
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  - multi-streamed, for today’s Internet and the modern web
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• Has encryption baked in, data/metadata are protected
  – uses TLS/1.3 for key negotiation
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QUIC broke new ground

- 0-RTT transport and crypto handshake
  - fundamentally difficult to do with TCP and the split TLS/TCP model
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- Troubleshooting and debugging
  - significantly richer capabilities
Self trace demo

- Video: https://ora1.kazuhooku.com/test/self-trace/video-only.html
- Trace: https://ora1.kazuhooku.com/.well-known/self-trace
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  - (self trace demo)

- Transforming server architecture
  - Direct Server Return (DSR)
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QUIC as an enabler

• New technologies within QUIC
  – at Fastly: pico congestion control, reordering tolerance ↔ easier to try and deploy
  – you will hear about more such experiments today
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• MASQUE
  – employing HTTP/3 and QUIC to create hidden tunnels
  – Apple Private Relay
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• MOQ (Media Over QUIC)
  – the New World for WebRTC refugees
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• QUIC is a transport technology that can actually be evolved on the Internet
  – it is a continuously evolving, and multiple versions exist in parallel today
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We used HTTP and the web as the vehicle to deploy QUIC into almost all server and client environments.
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In doing this, we created a path through an ossified Internet for new end-to-end transports and technologies to thrive.
Thank you!