Q4S: Quality for Service
(formerly Q-HTTP)

How did we get here?
Problem statement: main use case
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When SuperMario stops, downstream rate falls down dramatically.
Problem statement: user

Today we have...

- Best-effort Web-dominated Internet
- Access connection requirements
- Static contract-based connection capabilities

VS

We desire...

- Differenciated services oriented-Internet
  - E2E connection requirements
  - On-demand-dynamic service-oriented connection capabilities
Current approach: content/service provider

- Today’s approach
  - Contents adapts to connection
    - adaptative encoding
  - Oversize network
  - Delivery close to subscriber
    - High deployment effort
    - Intra-provider QoS

- Why not?
  - Connection adapts to contents
    - Dynamic triggering AQoS+NQoS
    - Centralized delivery model
      - Less deployment effort
      - Inter-provider QoS

VS
Current Tools for NQoS and QoS tracking

- RSVP:
  - Fixed network requirements VS. Checking actual conditions
  - Near-Static resources assignment
  - RSVP is not implemented in real world as e2e, and it is difficult to accomplish such due to scalability and interoperability issues across Internet

- RTP/RTCP:
  - Optimized for media contents, not an application independent solution
  - Network measurement is made inband with media flow: not optimal to multiple flows, and can not be applied to non-RTP application flows
A new approach: Q4S

- Dynamic quality: may shape up on the fly
  - Active during session lifetime
  - Active only for application flows

- Protocol/Application-independent E2E measurement method
  - Intra-provider, Inter-provider

- Technology agnostic: just ALERT if conditions are not met
  - Current approaches may be valid, all add up to final solution:
    - adaptative encoding, RSVP, DiffServ, ...
Q4S Session lifetime flowchart
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Handshake

Requirements are sent

Negotiation

Bandwidth, latency, jitter and packet loss measurement

Requirements reached?

NO

ALERT (cause and direction)

YES

Continuity

Application launching

Latency, jitter, packet loss continuous measurement

Requirements reached?

NO

ALERT (cause and direction)

YES

Application flows

Q4S

ISP

ISP

ISP

Server

Client
Q4S Questions & Answers

Dynamic
E2E
On-demand

Thanks for your attention & for the WG 😊

QoS track

Tech-agnostic

Out-of-band
diffserv