RTCWEB Transport

May 2014, Washington DC

Role of Transports document

- Collect all the pointers to transport-related specs (ICE, RTP, data channel, DTLS…)
- When necessary, define how to use other specs in RTCWEB browsers*
- Does not specify an API
- Does not specify out of band negotiation
  - not even SDP, but may point at SDP features

* “browser” is often more easily understood than “UA”, but not quite as broad a term

Stuff defined here

because there's nowhere else they go

- Data channel / RTP multiplexing
- Sender prioritization under congestion
- MAY/MUST/SHOULD choices in ICE

Stuff resolved after London IETF

- ICE TCP candidates is MUST
- NDATA in data channels is in
- RFC 4571 is the framing format over TCP
- DSCP markings vs multiplexing described better
  - Limitation of DSCP wrt media multiplexing on top of TCP pointed out
- IPv6 temporary addresses described
- More discussion of multiplexing
  - Mandatory modes

Stuff still missing

- Still no HTTP CONNECT description
  - in tandem with -firewalls- draft?
- No clear consensus on priority

Priority: When to send what

- Does not affect if one can send a packet
  - that’s congestion control
- Does affect what gets sent
- Guideline: Raising priority should mean better service
- Guideline: Connections shouldn’t be completely starved
- Feeling: Precision isn’t a requirement
  - We accepted 4 levels already
- Keep It Simple

The Priority Sketch

- Requirement: Single CC environment
  - Multiplexed on one 5-tuple with a single DSCP
    - Note tension with DSCP spec in TSVWG!
  - OR grouped by yet-unspecified means (RMCAT)
- Method: Weighted Round Robin
  - 1 step up = twice as much “quota”
- Does not specify encoder behaviour
  - Could configure a codec for “its share”
  - Could also drop non-dependency packets
  - Could apply pushback or drop on data channels
  - Seen as an implementation matter (is this OK?)

Pros, Cons and Alternatives

- Pro: Simple
- Con: Limited applicability (non-DSCP bundles only)
- Con: Nobody else does exactly this….

Alternatives

- Leave to implementor discretion
- Use strict priority
- Specify something more complete
- ?

Multiplexing Modes

Modes described (section 4.1):

- Each media stream on one 5-tuple, one 5-tuple for data (MUST)
- Media streams grouped by type (MAY)
  - Data either bundled or unbundled
- All media and data on one 5-tuple (MUST)

Do we need more?

- Suggested: At least one MUST with data unbundled, media bundled

HTTP CONNECT

- Explicit dialogue with a HTTP(s) proxy
  - Works today, widely used for other things
- Uses standard HTTP mechanisms that an admin can allow or disallow
- Works for TCP candidates and TURN over TCP/TLS (both of which we mandate)
- Issues:
  - No standard proxy-finding mechanism
  - Do we need identification of “this is RTCWeb”? If so, how?
- Draft text needed!