

WebRTC: Media Transport and Use of RTP

draft-ietf-rtcweb-rtp-usage-04

Colin Perkins – University of Glasgow
Magnus Westerlund – Ericsson
Jörg Ott – Aalto University

Status

- The -04 draft attempts to reflect the consensus of the interim meeting
- Looking for detailed feedback on the draft via the mailing list
- This presentation will highlight major open issues; not intending to discuss details today

Choice of RTP Payload Formats

- **Mandatory audio codecs:**
 - Will update the draft to reflect the outcome of the discussion on Monday
 - Note: RFC 3551 states "Audio applications operating under this profile SHOULD, at a minimum, be able to send and/or receive payload types 0 (PCMU) and 5 (DVI4)" – conflicts with the recommendation from Monday's session
- **Mandatory video codecs:**
 - Will update the draft to reflect any decision on mandatory video codecs

RTP Session Multiplexing

- REQUIRED to support sending each media type as a separate RTP session (i.e., separate UDP ports)
- Consensus to *also* support sending several media types on a single transport layer flow as an option
- REQUIRED to support this as one RTP session with multiple media types
 - Violates a “SHALL NOT” in RFC 3551, can lead to anomalous RTCP behaviour, and has other limitations, but workable for current WebRTC use cases
 - Proposals to AVTCORE to specify this (draft-westerlund-avtcore-multi-media-rtp-session-00 and draft-lennox-avtcore-rtp-multi-stream-00) – come to AVTCORE to support their adoption
- Desirable to also have a multiplexing solution that keeps the RTP session distinction while reducing the number of transport ports
 - To support widest range of RTP features, and for ease of gateway operation
 - One option is draft-westerlund-avtcore-transport-multiplexing
 - Should this be RECOMMENDED or OPTIONAL?

Generation of the RTCP CNAME

- Use of RFC 6222 is RECOMMENDED in the draft
- Growing consensus that randomly chosen CNAME values need to be supported
 - draft-rescorla-avtcore-random-cname-00 will be discussed in AVTCORE this afternoon
 - Will reference this if it's accepted as an AVTCORE work item

Congestion Control

- RTP Media Congestion Avoidance Techniques BOF this afternoon
 - If this leads to a working group, expect to reference output documents of that working group
 - If no working group is formed, need to reconsider what congestion control can be provided
- Boundary conditions
 - draft-perkins-avtcore-rtp-circuit-breakers currently REQUIRED, dependent on adoption by AVTCORE
 - Desirable to be able to specify a rate limit in SDP – open issue: what do we need to support to achieve this?

Performance Monitoring

- Basic RTCP reports on RTT, packet loss, and jitter; RTCP Extended Reports (XR) provide *many* more metrics
- Should we require support for RTCP XR?
 - No requirements in use cases draft, but draft-huang-rtcweb-monitoring-00 has some suggestions

WebRTC API Considerations

- Section 11 describes how WebRTC API features map onto RTP mechanisms described
- No consensus on current text at interim meeting
- Is it appropriate to discuss this mapping in this draft or should a separate draft be written?

RTP Implementation Considerations

- Section 12 provides guidance on implementation of the RTP features described
- Open questions noted:
 - Do we need a way to signal the number of SSRCs an end-point supports (e.g., draft-westerlund-avtcore-max-ssrc-02)?
 - Should we provide a way to set the CSRC list on outgoing RTP packets?
 - What API/signalling support is needed to support simulcast (i.e., sending the same stream at two different resolutions)?
 - How can QoS and/or stream priority be provided?
- Is it appropriate to include this guidance here, or should it be a separate draft?

Supported RTP Topologies

- Appendix A describes many different ways in which RTP endpoints and middleboxes can be organised
 - Includes discussion of how PeerConnections relate to RTP sessions
 - Aims to be useful guidance for RTCWeb implementors
- Suggest moving this material to a separate draft

Next Steps

- Any other major open issues not discussed?
- Will continue to revise the draft – please provide feedback on the details via the mailing list