

# RTP Session multiplexing

[draft-rosenberg-rtcweb-rtpmux-00](#)

[draft-perkins-rtcweb-rtp-usage-02](#)

# Outline

- The Basic Issue
- Current Situation
- Proposals and their issues
- Consensus Questions

# The Basic Issue

- RTP requires a lower transport layer to separate RTP sessions
- NATs and Firewalls are everywhere
  - Traversal solutions incur costs
- Opening additional pinholes:
  - Takes some small amount of time  $1*RTT + N*Ta$
  - May fail and cause communication failures
- As IPv4 address gets scarce the deployment of ISP NATs will become more common.
  - Preserving port space becomes more important
- Desired to only open a single pinhole

# RTCWEB Interactions

- RTCWEB has very tight schedule
- Desire to have only one transport layer flow for RTP sessions
- In an side meeting the draft authors and chairs for both AVTCORE and RTCWEB meet and discussed the issues

# RTCWEB Side Agreement

- RTCWEB will use a short term solution which is not a generic capability for muxing multiple RTP sessions into one transport.
  - Use one RTP session to allow audio to be added as an additional stream in a session along with video, differentiated by SSRC.
- This usage of such multiplexing will be signaled
  - The required signaling could be specified at a slower pace.
- The rtcweb solution will also allow fallback to separate session for audio and video
  - For FEC, for example, if used by rtcweb
  - For interop purposes
- We'd have a longer term solution which provides a generic muxing solution of multiple RTP sessions by adding an explicit RTP session identifier somewhere.
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# Requirements from Meeting

- The primary aim is to reduce the number of transport flows.
- The solution must be seen as valid RTP by middle boxes.
- The solution must be explicitly signaled
- The solution should avoid RTP/RTCP side effects, like very high RTCP bandwidths for audio
- The solution should enable reuse as much code as possible.

# Ideas

- A Number of Idea for Solution has been thrown around:
  - Shim Layer
  - Rosenberg et al.
  - A Single RTP session (Jonathan Lennox)
  - Use the Padding Field
  - Define a new Profile
  - Do a Header Extension
  
- Note:
  - All solutions requires explicit signaling and all participating RTP devices **MUST** agree to its use

# Question 1

- There is a request for being able to multiplex multiple RTP Sessions on the same lower layer without additional layers
- Is this a problem the WG is interested in solving long term?
- NOTE: RTCWEB is going to do a single session with multiple media types now!
  - They expect a better solution on long term



# Question 2

- If we aim at developing a solution, how important is compatibility with current RTP?
- Do people prefer:
  - a) Not modifying RTP at all and use a shim layer
  - b) Find a solution that requires signaling but doesn't break any RTP functions when signaled
  - c) That it should be compatible with RFC3550 but may break some extensions
  - d) Be similar to current RTP but we can break some part of RFC3550
  - e) That we do RTP version 3

# Way Forwards?

- Actions for AVTCORE:
  - A. Do Nothing
  - B. Define Requirements for an RTP internal solution
    - Develop solution to meet requirements