



# SDP Attributes Multiplexing

draft-nandakumar-mmusic-sdp-mux-attributes

Suhas Nandakumar  
snandaku@cisco.com<sup>1</sup>

# Version :03 → :05

- Submitted a maintenance version -04 with formatting nits.
- Renamed column “Current” to “Level” to match with the SDP terminology.
- **60\*/65** Sections reviewed by the RFC authors and comments incorporated. **THANK YOU** for all the reviewers.

\* some sections correspond to open issues.

# Q1 : PT Reuse

Example 1: a=rtcp-fb:<PT>

a=group:BUNDLE audio video  
**m=audio 3456 RTP/AVP 98**  
a=mid:audio  
a=rtpmap:97 iLBC/8000  
**a=rtcp-fb:nack**

**m=video 3456 RTP/AVP 98**  
a=mid:video  
a=rtpmap:98 VP8/90000  
**a-rtcp-fb:98 nack rpsi**

Example 2: a=rtcp-fb:<PT>

a=group:BUNDLE video1 video2  
**m=video 3456 RTP/AVP 98**  
a=mid:video1  
a=rtpmap:98 VP8/90000  
**a=rtcp-fb:98 ack //fb-type ACK**

**m=video 3456 RTP/AVP 98**  
a=mid:video2  
a=rtpmap:98 VP8/90000  
**a-rtcp-fb:98 nack rpsi //fb-type NACK**

# Q1 : PT Reuse – 2

## Example 3 : a=depend:<PT>

a=group:BUNDLE L1 L2 L3  
a=group:DDP L1 L2 L3

m=video 3456 RTP/AVP 97  
a=mid:L1  
a=rtpmap:98 H264/90000  
a=framerate:15

**m=video 3456 RTP/AVP 98**  
a=mid:L2  
a=rtpmap:98 H264-SVC/90000  
a=framerate:15  
a=depend:98 lay L1:97

**m=video 3456 RTP/AVP 98**  
a=mid:L3  
a=rtpmap:98 H264-SVC/90000  
a=framerate:30  
**a=depend:98 lay L1:98,97**

# Proposals

- Don't Allow PT to be re-used ... Assign category NORMAL
- Allow PT re-use, IFF the codec configuration matches .. Assign category NORMAL
  - *But, how do we resolve a=depend scenario, for example ?*

# Q2 : SSRC Repetition

Example 1: a=ssrc: .....

a=group:BUNDLE audio video  
m=audio 3456 RTP/AVP 98  
a=mid:audio  
a=rtpmap:97 iLBC/8000  
a=ssrc:1234 cname:user@example.com

m=video 3456 RTP/AVP 99  
a=mid:video  
a=rtpmap:98 VP8/90000  
a=ssrc:1234 cname:user@example.com

Example 2: FEC Grouping

a=group:BUNDLE m1 m2 r1  
a=group:FEC-FR m1 m2 r1  
  
m=audio 3456 RTP/AVP 97  
a=mid:m1  
a=rtpmap:98 VP8/90000  
a=ssrc:1111 cname:user@example.com

m=video 3456 RTP/AVP 98  
a=mid:m2  
a=rtpmap:98 VP8/90000  
a=ssrc:1111 cname:user@example.com

m=video 3456 RTP/AVP 99  
a=mid:r1  
a=rtpmap:99 VP8/90000  
a=ssrc:1111 cname:user@example.com  
a=rtpmap:99 1d-interleaved-parityfec/90000  
a=ftmp:99 L=10; D=10; repair-window=400000

# Proposals

- Don't Allow SSRC repetition, assign category NORMAL.
- Allow SSRC to be repeated, assign category SPECIAL and add the following notes

*“ SSRCs are allowed to be repeated IFF the media stream satisfies more than one m=line, in which case, the behavior is defined by the individual sources “*

*(source: Jonathan Lennox)*

## Q3: Mux RTP with Non-RTP

- Should multiplexing m=lines describing RTP Streams with non RTP streams over same 5-tuple be allowed ?

Proposal:

Yes. Category assignments are application protocol specific.



## Q4: O/A vs Declarative SDP

- Should this draft deal with analysis for O/A SDP usage alone ?

Proposal:

Yes, it aligns with the BUNDLE spec.

# Next Steps

- Looking for reviewers for the following RFCs

RFC4570 – SDP Source Filters

RFC4796 – MSRP Relays

RFC4091 – ANAT Semantics

RFC4145 – Connection Oriented Media

Section 5.46 – Historical Attributes (rtppred1, rtppred2, PSCid, bc\_service, bc\_program, bc\_service\_package)

- Proof-Read and update any inconsistencies.

**Thank You**