SDP Attributes & Multiplexing
- Analysis Framework

draft-nandakumar-mmusic-sdp-mux-attributes

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Context - 1

- SDP describes one or more RTP Sessions via attributes

- RTP/RTCP Session(s) characteristics are described with SDP Attributes as:
  - Session Level (S)
  - Media Level (M)
  - Session + Media Level (B)
  - Source level (SR)

- ~250 SDP Attributes registered with IANA till date and more will be added in the future.
Context - 2

- mmusic, rtcweb and clue working groups are considering multiplexing multiple m-lines (m-blocks)
  - m=line
  - m=line  ➔ 5 Tuple (Single RTP Session)
  - m=line
  - Example: BUNDLE Scheme
    (draft-ietf-mmusic-sdp-bundle-negotiation)
Scope of this draft?

• What is the interaction of m-block multiplexing on SDP attributes?

• How to analyze future SDP attributes?
### Approach

- **Framework** that categorizes current SDP attributes into following categories:

<table>
<thead>
<tr>
<th>Category</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORMAL</td>
<td>Attributes whose semantics remain unchanged.</td>
</tr>
<tr>
<td>BAD</td>
<td>Attributes that should not be multiplexed.</td>
</tr>
<tr>
<td>IDENTICAL</td>
<td>Attribute’s value must be repeated.</td>
</tr>
<tr>
<td>SUM</td>
<td>Attributes whose values represent aggregate.</td>
</tr>
<tr>
<td>TRANSPORT</td>
<td>Attributes selected for Mux depends on the usage.</td>
</tr>
<tr>
<td>SPECIAL</td>
<td>Source RFC must be referred for further handling.</td>
</tr>
</tbody>
</table>

- **Register** these with IANA to enable categorization of future SDP attributes.
CATEGOR Y:  NORM AL

• Definition: Attributes that can be independently specified when multiplexing and retain their original semantics.

ex: sendrecv (B), f mtp(SR), content(M), bwtype:CT(S), 3GPP-Integrity-Key(S)
CATEGORY: BAD

- Definition: Attributes where multiplexing SHOULD NOT be used.

ex: ulpfec(B), previous-ssrc(SR), ssrc(M), bcastversion(S), h248item(S)
CATEGOR Y: IDENTICAL

• Definition: Attributes that must be “identical “ across all the m-blocks being multiplexed.

   ex: key-mgmt(B), rtcp-rsize(M), bcastversion(S), source-filter(B)
CATEGORY: SUM

• Definition: Attributes can be set normally but the software MUST apply the “sum” of all attributes being multiplexed.

ex: bwtype:AS(B), bwtype:RS (B)
• Definition: Attributes that are set normally across m-blocks, but only one is selected depending on the usage.

ex: ice-pwd(B), rtcp(M)
CATEGORY: SPECIAL

- Definition: Attribute needs referring the parent RFC to understand the multiplexing implications.

  ex: extmap(B), ssrc-group(M), nack ecn(M)
Next Steps?

• Get consensus on the framework categories.

• Need help to finish classification
  - Collaborators
  - RFC Authors

• Create a IANA section for the draft to add new column to the SDP registries.