

SDP Offer/Answer mechanism to negotiate the usage of bundled media

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GOAL

- SELECT A MECHANISM TO MOVE FORWARD WITH
- IMPLEMENTATIONS EXPECTED TO SHIP SOON

ALTERNATIVES

- **BUNDLE**
 - [draft-ietf-mmusic-sdp-bundle-negotiation](#)
 - New SDP grouping framework extension, “BUNDLE”
 - Each m- line associated with a group shares the **same** port number
 - Multiplexed media described in each associated m- line.
- **Cullen BUNDLE (TOGETHER)**
 - [draft-nandakumar-rtcweb-sdp](#) , [draft-alvestrand-one-rtp](#)
 - Similar to BUNDLE
 - Difference: Each m- line associated with a group uses **different** port number
 - If multiplexing is used, the port of the top-most m- line is used
- **MMT**
 - [draft-holmberg-mmusic-sdp-mmt-negotiation](#)
 - New SDP grouping framework extension, “MMT”
 - New SDP media type, “anymedia”, used to describe the multiplexed media session
 - New SDP attribute, “mmttype”, used to map PT values to specific media types

EXAMPLE: BUNDLE

v=0
o=alice 2890844526 2890844526 IN IP4 host.atlanta.com
s=
c=IN IP4 host.atlanta.com
t=0 0
a=group:BUNDLE foo bar
m=audio 10000 RTP/AVP 0 8 97
a=mid:foo
b=AS:200
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:97 iLBC/8000
m=video 10000 RTP/AVP 31 32
a=mid:bar
b=AS:1000
a=rtpmap:31 H261/90000
a=rtpmap:32 MPV/90000

EXAMPLE: Cullen BUNDLE

v=0

o=alice 2890844526 2890844526 IN IP4 host.atlanta.com

s=

c=IN IP4 host.atlanta.com

t=0 0

a=group:BUNDLE foo bar

m=audio 10000 RTP/AVP 0 8 97

a=mid:foo

b=AS:200

a=rtpmap:0 PCMU/8000

a=rtpmap:8 PCMA/8000

a=rtpmap:97 iLBC/8000

m=video 20000 RTP/AVP 31 32

a=mid:bar

b=AS:1000

a=rtpmap:31 H261/90000

a=rtpmap:32 MPV/90000

EXAMPLE: MMT

```
v=0
o=alice 2890844526 2890844526 IN IP4 host.atlanta.com
s=
c=IN IP4 host.atlanta.com
t=0 0
a=group:MMT foo bar zoe
m=audio 10000 RTP/AVP 0 8 97
a=mid:foo
b=AS:200
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:97 iLBC/8000
m=video 20000 RTP/AVP 31 32
a=mid:bar b=AS:1000
a=rtpmap:31 H261/90000
a=rtpmap:32 MPV/90000
m=anymedia 30000 RTP/AVP 0 8 97 31 32
a=mid:zoe
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:97 iLBC/8000
a=rtpmap:31 H261/90000
a=rtpmap:32 MPV/90000
a=mmtype: 0 audio
a=mmtype: 8 audio
a=mmtype: 97 audio
a=mmtype: 31 video
a=mmtype: 32 video
```

ISSUES: BUNDLE

- **Usage of same port number**
 - Offer might be rejected
- **Need to describe how existing, and new, SDP parameters in each m- line affects the multiplexed media**
 - E.g. bandwidth calculation based on the bandwidth given for each m- line

ISSUES: Cullen BUNDLE

- **Non-supporting intermediaires**
 - Will send media, and expect media to be received, on the different ports indicated in SDP
 - No knowledge that the port of the top-most m- line is to be used
- **Non-supporting endpoint copies grouping attribute into SDP answer**
 - Offerer will think that Cullen BUNDLE is used
- **Not possible to set top-most m- line to zero?**
- **ICE candidates for multiple ports**
- **Need to describe how existing, and new, SDP parameters in each m- line affects the multiplexed media**
 - E.g. bandwidth calculation based on the bandwidth given for each m- line

ISSUES: MMT

- **Rejection of unknown media type**
- **Large SDP**
 - Only if both individual media and anymedia are offered
 - Only initial offer
- **ICE candidates for multiple ports**
 - Only if both individual media and anymedia are offered
- **RTP only?**
 - Currently RTP/AVP is used as protocol

NEXT STEP

- WHICH APPROACH DO WE MOVE FORWARD WITH?

THANK YOU FOR LISTENING!

<http://tools.ietf.org/html/draft-ietf-mmusic-sdp-bundle-negotiation-00>