SDP Capability Negotiation

draft-andreasen-mmusic-sdp-capability-negotiation-01.txt

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Recap

- Extend SDP with capability negotiation in a backwards compatible manner

- Originally motivated by inability to negotiate either vanilla or secure RTP

- Viewing the problem a bit broader than that:
  - List of requirements, which include:
    - General transport protocol (RTP profile) negotiation
    - Media type and media format (codec) negotiation
    - Attribute negotiation
  - Solution satisfying those requirements

Example Offer and Answer

Offer

v=0

o=- 25678 753849 IN IP4 128.96.41.1

s=

c=IN IP4 128.96.41.1

t=0 0

m=audio 3456 **RTP/AVP** 0 18

a=sqn: 0

a=cdsc: 1 audio RTP/AVP 0 18

a=ctrpr: 1 RTP/SAVP

a=capar: 1 a=crypto:1
**   AES_CM_128_HMAC_SHA1_32**
**   inline:NzB4d1BINUAvLEw6UzF3WSJ+PS**
**   dFcGdUJShpX1Zj|2^20|1:32**

a=pcfg: c=1,2 p=1 a=1

a=pcfg: c=1,2

Answer

v=0

o=- 24351 621814 IN IP4 128.96.41.2

s=

c=IN IP4 128.96.41.2

t=0 0

m=audio 4567 **RTP/SAVP** 0 18

a=crypto:1
    AES_CM_128_HMAC_SHA1_32
    inline:d0RmdmcmVCspeEc3QGZiNW
    pVLFJhQX1cfHAwJSoj|2^20|1:32

a=acfg: c=1,2 p=1 a=1

Major Changes in -01

- Updated -00 requirements based on feedback in Montreal
  - Missed adding two new requirements though:
    - REQ-150: Specify valid combinations of media lines (constraint based)
    - REQ-160: Specify valid combinations of media formats between media streams (constraint based)
- Updated solution to align with the new requirements
  - Simcap (RFC 3407) extensions to allow for new capability types and more general session level capabilities
  - Removed transport addresses capabilities ("a=ctrad" attribute)
  - Allowed for transport protocol capabilities at the session level
  - Defined new "a=capar" attribute for specifying attribute capabilities with a handle (facilitates negotiating attributes)
  - Updated potential configurations (a=pcfg) and actual configurations (a=acfg) to include attribute capability negotiation

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Discussion Item #1

- Most importantly, is the general scope and requirements right ?

- Two specific requirements to (re)consider:
  - REQ-150:   It MUST be possible to specify valid combinations of media lines
    - Is this framework right for that or should we use grouping of media lines here instead (may want to support both constraint-based and required combinations) ?
  - REQ-160:   It MUST be possible to specify valid combinations of media formats between media streams
    - Can add a fair amount of complexity.
    - Do we really want/need this ability ?

Discussion Item #2

- Current solution tries to reuse RFC 3407 (simcap)
    - Attribute capabilities ("a=cpar") didn't work well
        - Introduced new "a=capar" attribute with a handle instead
    - A few extensions needed
        - Wildcarding of "a=cdsc" parameters
        - Allow for things besides "a=cdsc" after "a=sqn"
        - Should probably lift 255 capability number restriction
    - RFC 3407 doesn't separate transport protocol and media formats
        - Works, but is syntactically a bit inconsistent (especially if need to support REQ-150 and REQ-160)
- Should solution be bound by RFC 3407 in any way ?

Next Steps

- Consider requirements complete (modulo today's discussion ?)

- Update spec accordingly

    - Also, more detail needed in various places

- Feedback solicited