Session Description Protocol

(version 2)

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Session Directory - components

Session Description Protocol

- the information necessary to find, join, and decode and control the media streams comprising a “session”
- enough information to attempt advance booking of resources (currently particularly the Mbone)

Distribution Architecture

- how to distribute this information to potential recipients
- needs to be timely and to scale much better than the sessions themselves
- deterministic behaviour for editing and deletion of sessions

Address Allocation Algorithm

SDP

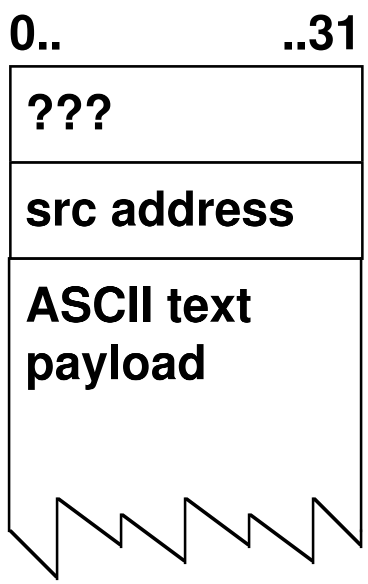
Session Description Protocol

- **Version 1: sd**
- **Version 2:**
  - draft-ietf-mmusic-sdp-00.(txt,ps)

SDP General Requirements

- compact format
- flexible
- human readable
- communication by dedicated tools, email, www
- verifiable format

sd packet format



carried in UDP multicast on 224.2.127.255, port 9876

sd payload example (SDPv1)

s=MICE Seminar

i=see http://www.cs.ucl.ac.uk/mice details

o=mhandley@shrew.cs.ucl.ac.uk

c=224.5.17.11 127 2872038501 2872643301

m=audio 3456 0

m=video 2232 0

a=fmt:ivs

m=whiteboard 32415 0

a=orient:seascape

a=recvonly

Session Descriptions (1)

- **Fields must be in the following order:**

s=	**session name**
i=	**information (optional but recommended)**
u=	**URI (optional)**
o=	**originator**
e=	**email address (zero or more)**
p=	**phone number (zero or more)**
h=	**originating host (optional)**

Session Descriptions (2)

c= **conference data**

b= **bandwidth (optional)**

t= **repeat time (zero or more)**

k= **encryption key (optional)**

a= **attribute (zero or more)**

zero or more media descriptions

Media Descriptions

m=	**media data**
c=	**conference data (optional)**
k=	**encryption key (optional)**
a=	**attribute (zero or more)**

Session Name and Information

s=session name

i=session description

s-field ::=text

i-field::=text

text ::= (printable-8859-1)+ | (unicode-utf7)+

printable-8859-1::=<characters 9, 32-???,???-255>

unicode-utf7::=<characters 9, 32-??? excepting “~” and   “/”>

- **iso8859-1 is the default.**
- **handling unicode-1-1-utf7 is optional**

Universal Resource Indentifier

Uniform Resource Locator

u=http://ftp.isi.edu/internet-drafts/

- This is the main way to provide a detailed description.
- A single u= field is optional

Uniform Resource Names

- URNs will be allowed when defined

Originator and Email Address

Originator

o=*username@hostname*

- **compulsory**

Email Address

e=*email-address*

- **zero or more may be provided**
- **compulsory for semi-private announcements**

Phone Number

p=+*country-code national-number*

- The national number should not include any national prefix not used when dialing from abroad.
- There must be a single space between the country code and the national number
- National numbers may contain spaces, but are encouraged not to. They may contain no other characters than digits or space.

Conference Data

c=*address ttl start-time stop-time*

- **address may be a unicast address or a multicast address.**
- **ttl must be in the range 0-255**
- **start-time and stop-time are 10 digit NTP timestamps in seconds, or are both zero implying the conference in not bounded.**
- **unbounded conferences are strongly discouraged.**

Repeat Time

t=*mins hrs mday month wday duration*

- **the first five are one of:**
  - **a comma separated list of values**
  - **an asterisk meaning “all legal values”**
- **duration is the length of time the session will be active for in seconds.**
- **zero or more t= fields may be present**

t=30 9 * 4,6 1,2,3,4,5 1800

- **9:30-10:30 UTC on weekdays in April and June**

Bandwidth

b=*bandwidth [modifier]*

- **With no modifier, bandwidth is application specific, but is should be the applications' maximum bandwidth.**
- **No modifiers are currently defined.**

Encryption Key

k=*encryption-key*

- **Encryption key is a plain text key in printable ascii text.**
- **Usage is not defined in SDP, but see elsewhere...**
- http://www.cs.ucl.ac.uk/rns/rn9519.ps

Media

m=*media port id*

- **Initially media is one of:**
  - **audio**
  - **video**
  - **whiteboard**
- **port is a UDP port in the range 1025-65535**
- **id is obsolete , and should be 0**

Attributes

a=*field* :*value*

a=*flag*

- **This is the primary means for extending SDP**
- **Header attributes apply to all media**
- ***field*, *value* and *flag* must be in printable ascii**

Suggested Attributes (1)

a=fmt:*media-format*

- **This gives an encoding format for the media**
- **For RTP based media, the format should be an RTP payload type.**

Open issue:

- **do we allow lists of formats?**
- **an alternative is “format sets”**

Media Formats

Audio: pcm, pcm2, pcm4, idvi, dvi2, dvi4, gsm, lpc4**.**

- **An alternative might be to specify encoding and packet duration separately.**

Video: jpeg, jpg, mpeg, h261, nv, nvm, cellb

- **Is** jpg **(imm) a video format?**

Whiteboard: wb, nt

- **Not all media are RTP based!**

Suggested Attributes (2)

a=type:*conference-type*

- **Conference type is one of:**
  - **meeting**

    => sendrecv
  - **broadcast**

    => recvonly
  - **moderated**

    => sendrecv, mute-new-sites

Suggested Attributes (3)

a=recvonly

- **for broadcast style confs**

a=sendrecv

- **for interactive confs**

a=mutenewsites

- **??**

a=orient:orientation

- **orientation is one of** portrait**,** landscape**, or** seascape

Suggested Attributes (4)

a=charset:unicode-1-1-utf7

- **Selects a non-iso-8859-1 character set.**
- **This differs from MIME where allowed charsets are usually of the form** iso-8859-*