Session Description Protocol

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Main Changes since Danvers

- **no longer compatible with sd**
- **splitting "c" fields**
- **complete rework of repeat times**
- **rework of origin fields**
- **now have unique session ad ids**
- **rework of bandwidth fields**
- **other small changes**
- **split SDP from SDAP draft**

- **=>make SDP more generic**

An example:

v=0
o=mhandley 2873397496 2873397496 IP4 128.16.64.4
s=SDP seminar
i=A seminar on SDP draft 01.4
u=http://www.int/~mhandley/sdp.html
e=M.Handley@cs.ucl.ac.uk
p=+44 171 419 3666
t=2873397496 2873404696
m=audio 3456 VAT PCMU
m=video 2232 RTP H261

Version Number

`v=0`
(new field)

Origin

`o=<username> <sess id> <version> <addr typr> <address>`

- ***<username>*** **is the text username of the originator or "-"**
- ***<sess id>*** **is a number such that <username> *<sess id>* and *<address>* are globally unique for each session**
- ***<version>*** **is a number that increases each time the session is modified**
- ***<addr type>*** **is a string specifying the network and address type, eg "`IP4`", "`IP6`", "`ISDN`"**
- ***<address>*** **is the address of the originator's host**

Origin (cont)

- **Example:**

`o=mhandley 2873397496 2873397496 IP4 128.16.64.4`

- **Suggestion:**
- ***<sess id>*** **and *<version>* are NTP timestamps**

Information

- unchanged, except that “i” fields are now allowed in media descriptions as media stream labels.

Channel

- General:

`c=<address type> <channel address> <params>`

- For address type “IP4”:

`c=IP4 <IP address> <ttl>`

- For multicast, this is the address to listen to and send to.
- Multiple addresses can be specified using *<address>/<no of addresses>.*
- For unicast, this is the address to contact

Bandwidth

`b=<modifier>:<bandwidth>`

- *<modifier>* gives the meaning of the bandwidth figure
- *<bandwidth>* is in kilobits per second
- Two modifiers initially specified:
- `b=CT:<bandwidth>`
  - Conference Total: the maximum bandwidth all the media streams from all sites in the conference should use.
  - Only used in sesion description.
- `b=AS:<bandwidth>`
  - Application Specific: sets the application’s concept of max bandwidth per media stream
  - Only used in media description.

Times

`t=<start time> <stop time>`

- *<start time>* and *<stop time>* are NTP timestamps in seconds
- Now separate from “c” field date
- Multiple “t” fields are allowed - each specifies an addition period during which the session may be active (but see “r” fields).

Repeat Times

`r=<repeat interval> <active duration> <list of offsets>`

- During a period when the “t” field says the session *may* be active, this says when it *is* active.
- This is relative to the preceding “t” field.
- *<repeat interval>* is a length of time after which the session is repeated.
- *<active duration>* says how long the session is active for each time it’s active.
- *<list of offsets>* are offsets from the start time, and allow the session to be active several times each repeat interval.
- multiple “r” fields can be specified for each “t” field.

Repeat Times (cont)

- Example:

`t=2882844526 2898848070`

`r=604800 3600 0 90000`

- *<Start time>* is 9am, Monday 17th July, 1995 (say)
- First offset=0, duration=3600

=> first active 9-10am, 17/7/95

- Next offset=90000

=> next active 10am-11am, 18/7/95

- Repeat interval =604800=1 week

=>pattern repeats each week until *<Stop Time>* is reached

Repeat Times (cont)

- default units are seconds, but also allow other units:
- `Y` - years
  - same day of same month each year (only in repeat interval)
- `M` - months
  - same day each month (only in repeat interval)
- `d` - days (86400 seconds)
- `h` - hours (3600 seconds)
- `m` - minutes (60 seconds)
- `s` - seconds
- Eg: `r=1d 1h 0 25h`

Time Zones

- "t" fields are no problem, but "r" fields are affected by changes to and from daylight saving time.
- Different countries change at different times and on different dates.

`z=<adj time> <offset> <adj time> <offset>...`

- Each *<adjustment time>* gives the time the "reference" site changes to or from DST
- Each offset gives the size of the offset from the time that was in force at *<start time>*
- If a session lasts several years, it's likely the advertisement will be changed periodically.

Media Announcements

`m=<media> <port> <transport> <format>`

- media is typically "`audio`", "`video`", "`whiteboard`" or "`text`".
- *<port>* is the transport port.
- *<transport>* gives the transport protocol (eg, `RTP, VAT, UDP, HTTP`).
- Both are dependent on the *<address type>* field in the corresponding "c" field.
- *<format>* is the format of the data in the media stream. (eg `PCMU, H261, WB`)

Categorising Announcements

`a=cat:<category>`

- dot separated hierarchical category (similar to usenet news groups)
- Experimental - hence not a field in its own right.
- Need to sort out first level of hierarchy!
- Is it any use if not compulsory?
- Can have several cat attributes

Categorising Announcements

a=keywds:*<list of keywords>*

- a space separated list of keywords
- Experimental - hence not a field in its own right.
- Can only have one keywds attribute

Packet Time

a=ptime:*<packet time>*

- Gives the length of time of audio in each packet.
- Lost this info in move from sd format.
- Probably rarely needed - only required if it's necessary to specify that participants use a particular packet length.

Open Issues

- unicast conferences with different send and receive addresses/ports
- need more none-UDP options defined
- SDAP draft unfinished

Status

- A new client - sdr
  - Implements most of SDP draft 01.4
  - See MICE/TERENA demo
- The draft is:
- http://www.cs.ucl.ac.uk/staff/mhandley/sdp.01.ps
- Submit draft (officially!) after IETF
- Schedule for proposed standard?