Session Advertisement and Session Directories

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Session Directory

Session Description Protocol

- **the information necessary to find, join, and decode and control the media streams comprising a "session"**
- **enought 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**
- **needs to scale much better than the sessions themselves**
- **deterministic behaviour for editing and deletion of sessions**

Session Description Protocol

Requirements for Session Reception

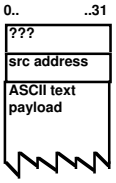
- **data to choose the session**
- **data to decide which media tools are required**
- **addresses, ports, ttls for these tools**
- **media specific flags**
- **conference control policies**

Session Description Protocol

Requirements for Advance Booking

- **scheduling information (start, stop, repeat interval, etc)**
- **contact information**
- **proposed resource usage**

sd packet format



carried in UDP multicast on 224.2.127.255, port 9876

sd payload format

```
s=MICE Seminar
i=see http://www.cs.ucl.ac.uk/mice for more 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
```

So What's Missing?

- Proposed Bandwidth
- URL (separate from information field)
- Originating Host Address (in ascii)
- Contact email address
- Contact phone number
- RP for PIM

What else is missing?

- An address and ttl per media
- Multiple Multicast Groups (layered encodings)
- Conference Control Mechanisms/Policies
- Repeat Bookings

Proposal

- Take sd format as basis for standard session description protocol
- Extend the protocol as necessary
- Modifications should be compatible with exisiting sd where possible

Protocol Extensions

u=*URL*
- optional

h=*originating host*
- should become compulsory

b=128 PEAK
- total conference bandwidth in Kbps and the type of the bandwidth estimate
- initially only define bandwidth type "PEAK"
- should become compulsory
- can optionally have one "b=" field per media stream

Protocol Extensions(2)

e=*contact email address*
- not necessarily same as "o=" field
- optional (except for private conferences)

p=*contact phone number*
- optional

Repeat Bookings:

t=*crontab format entry*
- the crontab entry is only active between the start and stop times give in the "c=" field

Protocol Extensions(3)

- An address and ttl per media:

  ~~a=addr:224.5.17.12~~

  ~~a=ttl:96~~

  decided to use additional "c=" fields instead
  - this is to attempt to keep compatibility with existing sd clients
  - if omitted, the "c=" entry takes precidence
- Multiple Multicast Groups
  - Does this need to be conveyed by sd?
  - Could be part of the RTP profile, meaning we only need to give one group

Note:

- Order of fields is important
- Fields refering to whole conf must precede media specific fields
- Unknown fields should invalidate announcement
  (can use "x-" fields for experiments)
- We may add extra attributes to fields later
  - unexpected attributes should be ignored
- Lines beginning "*<char>=*" should be parsed
  - other lines should be ignored

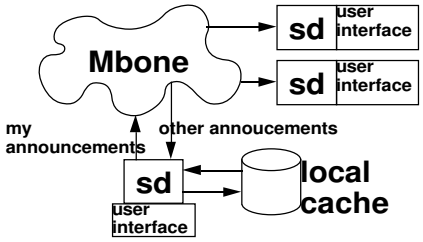
Conference Control Info

- Treat Conference Control as another media
- m=confctrl *port id*
- Everything else determined by media attributes

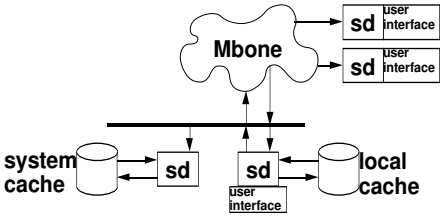
Distribution of Session Advertisements

- Existing sd mechanism
- Enhanced sd mechanism
- Van's proposed architecture
- WWW and Email
  - MIME Content-Type: application/x-sd

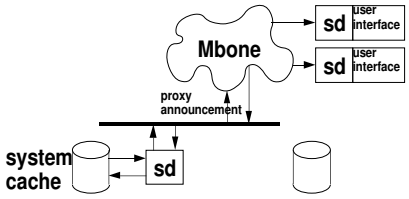
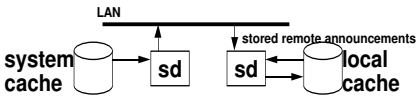
sd - distribution model



Proxy sd caching



Proxy sd announcements



Fast Startup