

SDP Source Selection

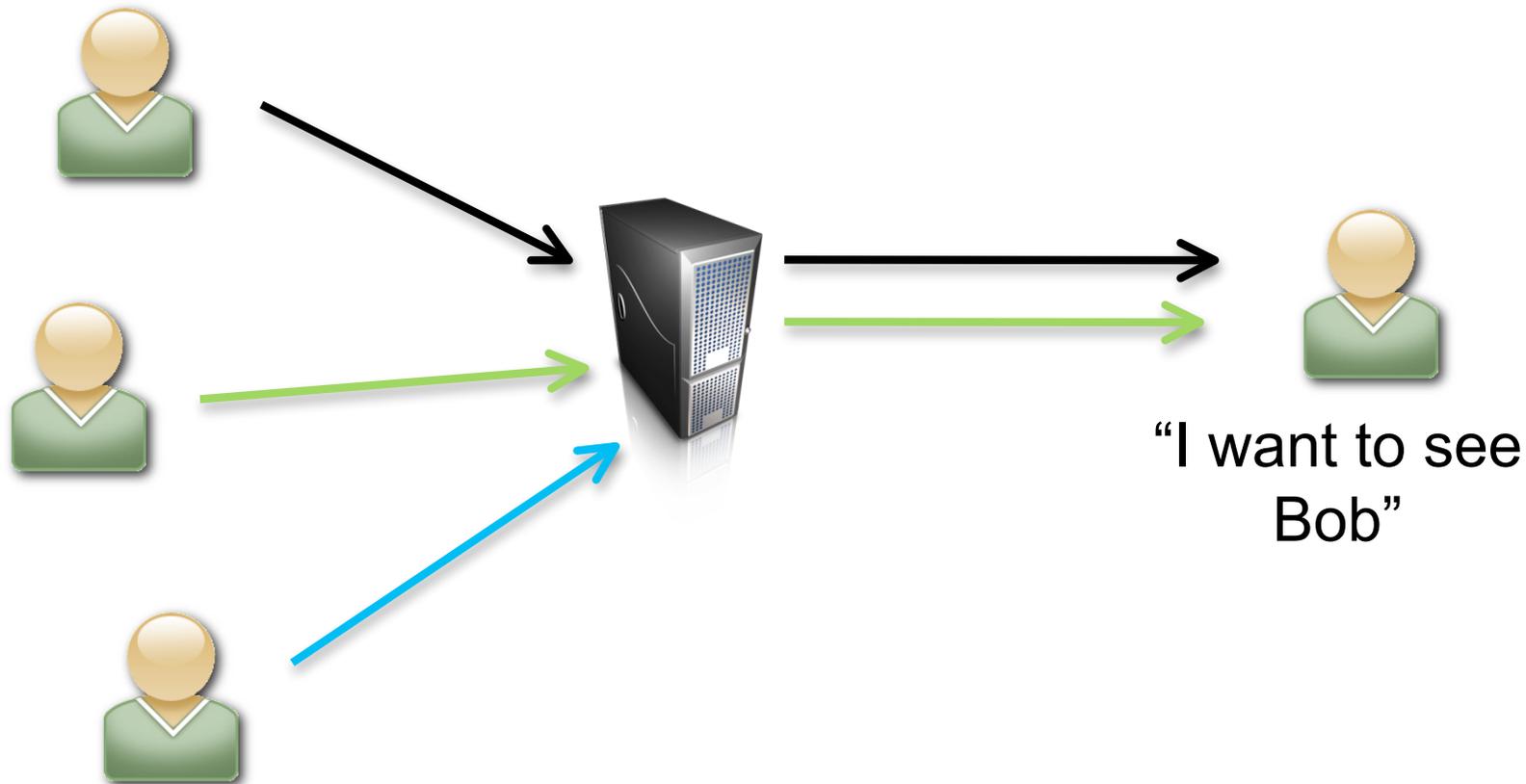
Jonathan Lennox

draft-lennox-mmusic-sdp-source-selection-00.txt

*Note well: Vidyo has potential IPR on
this draft; see*

<https://datatracker.ietf.org/ipr/1170/>

Motivating Architecture



- Multimedia conference
- Server forwards multiple senders' streams to receivers (unmixed) .
- Receivers can select specific streams to receive.

Architecture: details

- Multimedia conference; server forwards streams to participants.
 - Like Topo-Mixer, Topo-Video-switch-MCU, etc., but forwarding multiple (unmixed) streams.
- Server notifies participants of available streams.
- Participants can either explicitly request streams, or let the server choose.
- In a large conference, having a separate m= line for each available stream doesn't scale.
 - Server port consumption, NAT bindings, ICE setup, etc.
- Instead, send sources of the same media type over a single connection, distinguished by SSRC.

Remote Source Attributes

- Build on source attributes (RFC 5576)
 - `a=ssrc:12345 foo:bar`
- Define a new attribute, `remote-ssrc`
 - `a=remote-ssrc:67890 baz:quux`
 - Roughly, the “answer” to `ssrc`’s “offer.”
- Recipient learns about available sources.
 - From `ssrc` attribute in SDP; SIP/XCON conference package; in-band.
- Recipient sends `remote-ssrc` for sources it does, or does not, want to receive, along with parameters for how it wants to receive the sources.

Specific remote source attributes

- `“recv”` and `“inactive”`
 - I want this / don't want this.
- `“priority”`
 - If you don't have enough bandwidth, these ones are more important.
- `“imageattr”` (Video only)
 - I'm planning to display in this resolution; come as close as you can.
 - Syntax from draft-ietf-mmusic-image-attributes
- `“framerate”` (Video only)
 - I'm planning to display at this frame rate; come as close as you can.

New source attributes

- “send” / “inactive”
 - Answer “recv” / “inactive” remote-source attributes
- “information”
 - Like the SDP `i=` line
 - Provides textual information about a source, for human consumption.

Offer/Answer procedures

- If you receive a `remote-ssrc:` attribute in an offer, put a matching `ssrc: send` or `inactive` attribute in the answer.
- If you receive `remote-ssrc:` in an answer, no immediate response is necessary, but put `ssrc: send` or `inactive` in your next offer (if the source is still present).
- Regardless, always list all your available sources in `ssrc:` attributes, unless they're being provided by some other means.
 - E.g., the SIP/XCON conference package.

Open issues

- What to do following an SSRC collision
 - You could be requesting the wrong source?
 - I think the RFC 5576 procedures will handle this.
- Backward compatibility
 - Servers might want to treat endpoints that support this draft, but don't want any specific sources right now, differently from endpoints that don't support the draft.