

# **JSEP Update**

Justin Uberti & Cullen Jennings  
IETF 89

# Updates

- m= line recycling
  - m= lines without a local MediaStreamTrack are now recycled when new MSTs are added
  - Both a=recvonly and port 0 cases
- Bundle Policy
  - BUNDLE on by default, like rtcp-mux
  - Application can control use of bundle-only by setting a policy value, allowing it to minimize port gathering or maximize compatibility
- Rollback
  - Clarified that this always returns to the most recent stable state, and no further

# Updates

- ICE Candidate Pool
  - Discussed pre-gathering of ICE candidates
- Creation of multiple `a=recvonly` `m=` lines
  - Via constraint *OfferToReceiveAudio/Video: N*
  - For situations where answerer will have more streams than offerer
- SDP example draft I-D.nandakumar-rtcweb-sdp brought into alignment

# Open Issues

- msid, direction and MediaStream interactions
- ptime/max-ptime
- CNAMEs
- Same-Port Bundle Policy

# Issue 1: MSID and direction interactions

Action	Offer	Answer
X offers video, Y accepts and adds video	m=video PX a=msid:MSX a=sendrecv	m=video PY a=msid:MSY a=sendrecv
X offers video, Y rejects it entirely	m=video PX a=msid:MSX a=sendrecv	m=video 0
X offers video, Y rejects but adds its own video	m=video PX a=msid:MSX a=sendrecv	m=video PY a=msid:MSY a=sendonly <i>??? how to indicate reject ???</i>
(once video is active on both sides)		
X stops local video	m=video PX a=recvonly	m=video PY a=msid:MSY a=sendonly
X stops remote video	m=video PX a=msid:MSX a=sendonly <i>??? how to indicate stop ???</i>	m=video PY a=msid:MSY <i>&lt;-- MST still attached!</i> a=recvonly
X stops local and remote video	m=video 0	m=video 0

# Issue 1: Continued

- Key issue: a=sendonly insufficient to indicate whether a MST is paused/held, or stopped/rejected
  - Leads to orphan MSTs that can't be recycled
- **Proposal:**
  - Include a new attribute in SDP to indicate that a remote MST has been stopped
  - Upon receipt of this attribute the MST sender transitions it to the ENDED state, and removes it from the m= line, allowing it to be recycled
  - Harald proposes a=msid-control for this purpose

# Issue 1: Denouement

Action	Offer	Answer
X offers video, Y accepts and adds video	m=video PX a=msid:MSX a=sendrecv	m=video PY a=msid:MSY a=sendrecv
X offers video, Y rejects it entirely	m=video PX a=msid:MSX a=sendrecv	m=video 0
X offers video, Y rejects but adds its own video	m=video PX a=msid:MSX a=sendrecv	m=video PY a=msid:MSY a=sendonly <i>a=msid-control: stop</i>
(once video is active on both sides)		
X stops local video	m=video PX a=recvonly	m=video PY a=msid:MSY a=sendonly
X stops remote video	m=video PX a=msid:MSX a=sendonly <i>a=msid-control: stop</i>	m=video PY a=recvonly <i>MST no longer present, can be recycled!</i>
X stops local and remote video	m=video 0	m=video 0

## Issue 2: ptime

- Discussion on list about requirements for Opus and PCMU frame sizes
  - Opus indicates its supported frame sizes in draft-ietf-payload-rtp-opus-01
  - PCMU spec doesn't indicate exact frame sizes, but some consensus that 20, 30, 60 msec should be supported
  - What, if anything, should WebRTC indicate in SDP for a=ptime/a=maxptime?
- **Proposal:**
  - Document the supported values, but don't include any ptime/maxptime attributes in SDP



# Issue 3: CNAMEs

- **Guidance from IETF 88:**
  - Same CNAME indicates a shared clock, not necessarily that two tracks are synchronized
  - Synchronization therefore is a W3C matter, to be handled using MediaStream grouping
- **Proposal:**
  - Use the same CNAME for all MSTs. Behavior of non-WebRTC endpoints will be implementation dependent

# Issue 4: Same-Port Bundle Policy

- Normally the initial offer uses separate local ports for each  $m$ = line (or 0 for bundle-only)
  - Requires an updated offer after call established to fixup the ports to be the same (bundled) port
- In certain scenarios, the initial offer could use the same ports, because support for BUNDLE by the remote party is known *a priori*
  - Like bundle-only, but eliminates the need for a fixup offer
  - Also reduces gather time since no RTCP ports needed
- **Proposal:**
  - Add new bundle policy value (in addition to the existing "default", "all", and "none") to control this