Virtual IETF meetings with WebRTC

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IETF 109 – MOPS WG
November 17th
How we handled IETF meetings before
How we handled IETF meetings before
How we handled IETF meetings before
Serving IETF at scale with Janus

Turning live events to virtual with Janus

Lorenzo Miniero
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CommCon 2020
July, from my couch at home

https://commcon.xyz/session/turning-live-events-to-virtual-with-janus
Leveraging Janus for all our WebRTC needs

Janus
General purpose, open source WebRTC server

- [https://github.com/meetecho/janus-gateway](https://github.com/meetecho/janus-gateway)
- Demos and documentation: [https://janus.conf.meetecho.com](https://janus.conf.meetecho.com)
- Community: [https://groups.google.com/forum/#!forum/meetecho-janus](https://groups.google.com/forum/#!forum/meetecho-janus)
Large scale broadcasting overview (SOLEIL)
How to handle audio? The podcast example

• Not strictly speaking a Virtual event, but close enough
  • One or more people talking, and a (wide?) audience
  • During Covid, many podcasts done remotely (e.g., "Conan needs a friend")

• WebRTC a good fit for the conversation part
  • Easy to have a chat just using your browser
  • Broadcasting could be done with WebRTC too!

• May make sense to have the conversation mixed, though
  • If broadcasting with WebRTC, the more the speakers, the more the bandwidth
  • If NOT broadcasting with WebRTC, you need a mix to transcode anyway
  • More control on additional media (e.g., pre-recorded content)

• How to optimize mixing with the ability to bring people in in a scalable way?
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AudioBridge + RTP forwarding

Janus + AudioBridge plugin
AudioBridge + RTP forwarding
AudioBridge + RTP forwarding + Streaming
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Adding video: the “webinar” scenario

• Mostly a one-to-many scenario
  • A single presenter (maybe more than one video, e.g., screensharing)
  • Multiple passive viewers

• Can sometimes be “conversational” like a podcast, though
  • e.g., Q&A session, interview, or panel discussion

• As before, WebRTC definitely a good fit for publishing
  • Browsers support screensharing natively
  • Broadcasting could be done with WebRTC too! (but more streams, now)

• Video(s) may or may not be mixed
  • In both cases, still needs to be distributed to all participants
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VideoRoom + RTP Forwarding
VideoRoom + RTP forwarding + Streaming
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Bringing it all together for Virtual Events
The end result: IETF 108 in “Madrid”

Q – Meeting Structure?

- Is the “meeting” still structured over a week?
  - Or does it spread over a longer period of time? Multiple weeks?
- Do the meetings still exist within certain hours? Or do they meet over the course of 24 hours?
- Do we have multiple sessions happening at the same time?
- How long do we meet each day? What does the schedule look like for the day?
- What kind of breaks are planned in the day?
  - Balance between people wanting to get all the remote meetings “done”, and having time to socialize (if social tools are available)
From IETF 108 to 109: multicast!
DNS and BGP

Some notes on Meetecho

Videos are pre-recorded, so we will take questions at the end of each presentation!

To ask a question, enter the queue (mic+hand logo), then the chairs will call you out and enable your audio!

More information on Meetecho usage can be found here:
How that worked during IETF 108
How it will work at IETF 109

The diagram shows a flow of audio and video data through multiple components. The data flows from a WebRTC video source, through a VideoRoom, and then to multiple JANUS instances. The JANUS instances are connected via a multicast network, which distributes the audio and video streams to multiple destinations, including JANUS #2 and JANUS #3, which are involved in streaming processes.
Broadcasting WGs to YouTube Live
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A practical example: TDD @ IETF 108
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https://www.youtube.com/watch?v=DV0q9s94RL8
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Technology Deep Dive: DNS

Come back for part 2!

And in the meantime, please fill in the survey at

https://www.surveymonkey.com/r/108TDD

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Thanks! Questions? Comments?