



Social audio applications with Janus

Lorenzo Miniero

 @lminiero@fosstodon.org

FOSDEM 2023 Real Time Communications
5th February 2023, Brussels 



Who am I?



Lorenzo Miniero

- Ph.D @ UniNA
- Chairman @ Meetecho
- Main author of Janus

Contacts and info

- lorenzo@meetecho.com
- <https://fosstodon.org/@lminiero>
- <https://www.slideshare.net/LorenzoMiniero>
- <https://lminiero.bandcamp.com>



What's "social audio"?



- Social media platform that use audio as their primary channel of communication ¹
 - Messages, podcasts, virtual audio rooms/broadcasts
- Quite popular in the recent past
 - Clubhouse
 - Twitter Spaces
 - Reddit Talk
 - ... ²
- WebRTC seems like a perfect fit here!
 - It's not all about video...

¹https://en.wikipedia.org/wiki/Social_audio

²<https://www.disruptiveconversations.com/2022/12/with-twitter-in-chaos-what-is-plan-b-for-a-twiterspaces-alternative.html>



What's "social audio"?



- Social media platform that use audio as their primary channel of communication ¹
 - Messages, podcasts, virtual audio rooms/broadcasts
- Quite popular in the recent past
 - Clubhouse
 - Twitter Spaces
 - Reddit Talk
 - ... ²
- WebRTC seems like a perfect fit here!
 - It's not all about video...

¹https://en.wikipedia.org/wiki/Social_audio

²<https://www.disruptiveconversations.com/2022/12/with-twitter-in-chaos-what-is-plan-b-for-a-twtterspaces-alternative.html>



What's "social audio"?



- Social media platform that use audio as their primary channel of communication ¹
 - Messages, podcasts, virtual audio rooms/broadcasts
- Quite popular in the recent past
 - Clubhouse
 - Twitter Spaces
 - Reddit Talk
 - ... ²
- WebRTC seems like a perfect fit here!
 - It's not all about video...

¹https://en.wikipedia.org/wiki/Social_audio

²<https://www.disruptiveconversations.com/2022/12/with-twitter-in-chaos-what-is-plan-b-for-a-twtterspaces-alternative.html>



You didn't hear it from me... 😊



v

@voluntas



Clubhouse は Agora 、 Twitter Spaces は Janus
WebRTC Server 。



KOIZUKA Akihiko @koizuka · May 4, 2021

clubhouse twitter spaces 違い

11:57 AM · May 4, 2021



How do social audio applications usually work?



- Live conversations that are broadcast to a vast audience
 - Limited number of active speakers (often taking turns)
 - Many passive attendees (just listening, unless they take the floor)
- Different challenges to tackle
 - Live conversation part: needs to be real-time
 - Distribution to audience: may have a bit more latency
 - Note: the higher the latency, the worse active/passive transitions are
- WebRTC obvious choice for the conversation, what about distribution?
 - Relying on a CDN may make things easier (it's that they all do now)
 - WebRTC would give “livest” results, but we need to scale it properly



How do social audio applications usually work?



- Live conversations that are broadcast to a vast audience
 - Limited number of active speakers (often taking turns)
 - Many passive attendees (just listening, unless they take the floor)
- Different challenges to tackle
 - Live conversation part: needs to be real-time
 - Distribution to audience: may have a bit more latency
 - Note: the higher the latency, the worse active/passive transitions are
- WebRTC obvious choice for the conversation, what about distribution?
 - Relying on a CDN may make things easier (it's that they all do now)
 - WebRTC would give “livest” results, but we need to scale it properly



How do social audio applications usually work?



- Live conversations that are broadcast to a vast audience
 - Limited number of active speakers (often taking turns)
 - Many passive attendees (just listening, unless they take the floor)
- Different challenges to tackle
 - Live conversation part: needs to be real-time
 - Distribution to audience: may have a bit more latency
 - Note: the higher the latency, the worse active/passive transitions are
- WebRTC obvious choice for the conversation, what about distribution?
 - Relying on a CDN may make things easier (it's that they all do now)
 - WebRTC would give “livest” results, but we need to scale it properly



What if we want to use Janus for the job?



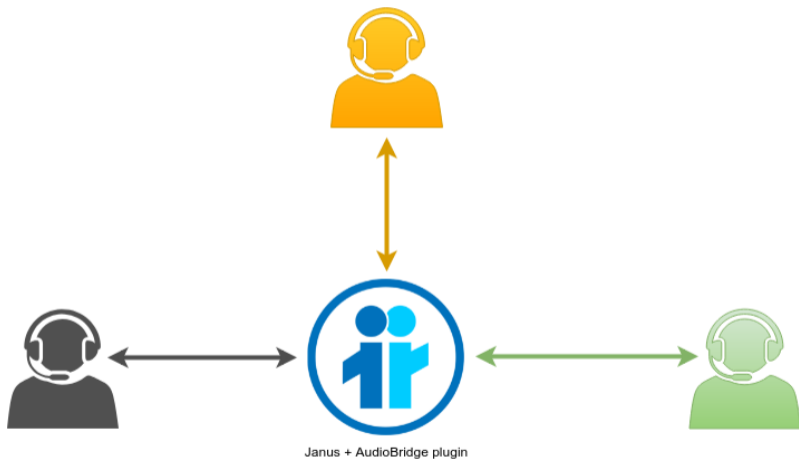
Janus

General purpose, open source WebRTC server

- <https://github.com/meetecho/janus-gateway>
- Demos and documentation: <https://janus.conf.meetecho.com>
- Community: <https://groups.google.com/forum/#!forum/meetecho-janus>

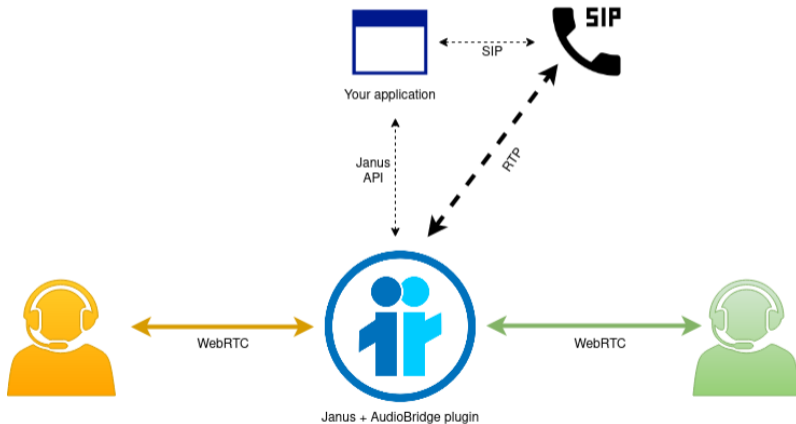


Using an MCU for the conversation (AudioBridge)



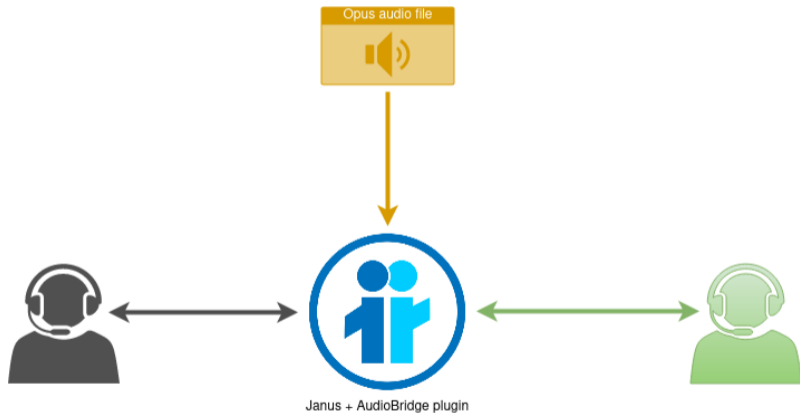


Using an MCU for the conversation (AudioBridge)



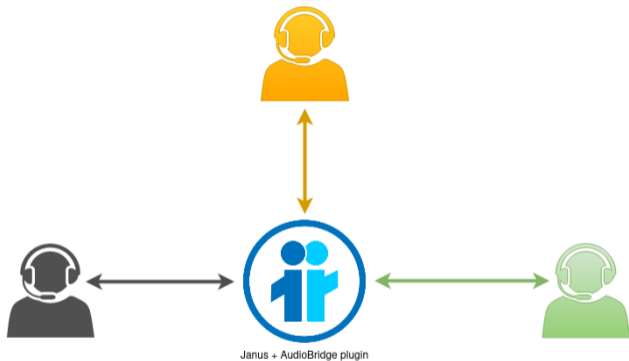


Using an MCU for the conversation (AudioBridge)



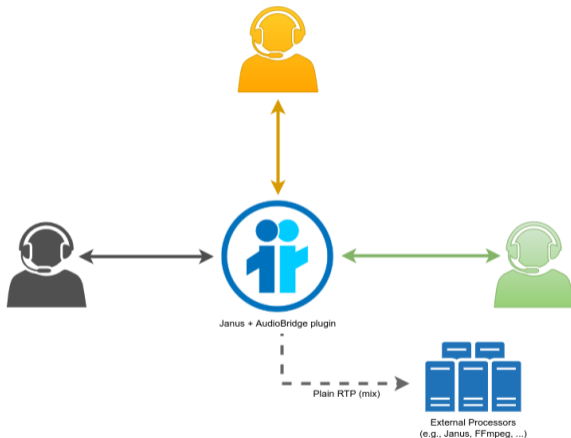


Using an MCU for the conversation (AudioBridge)





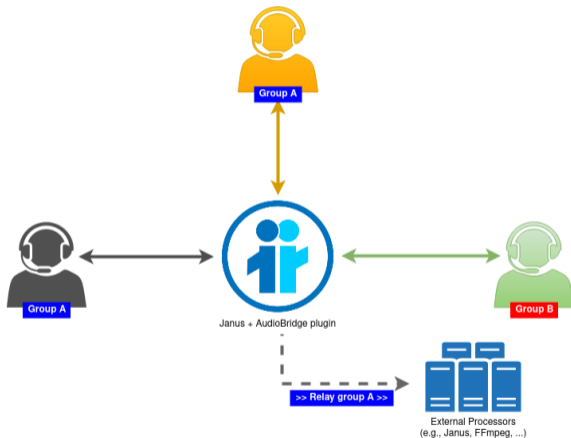
Using an MCU for the conversation (AudioBridge)



<https://archive.fosdem.org/2020/schedule/event/janus/>



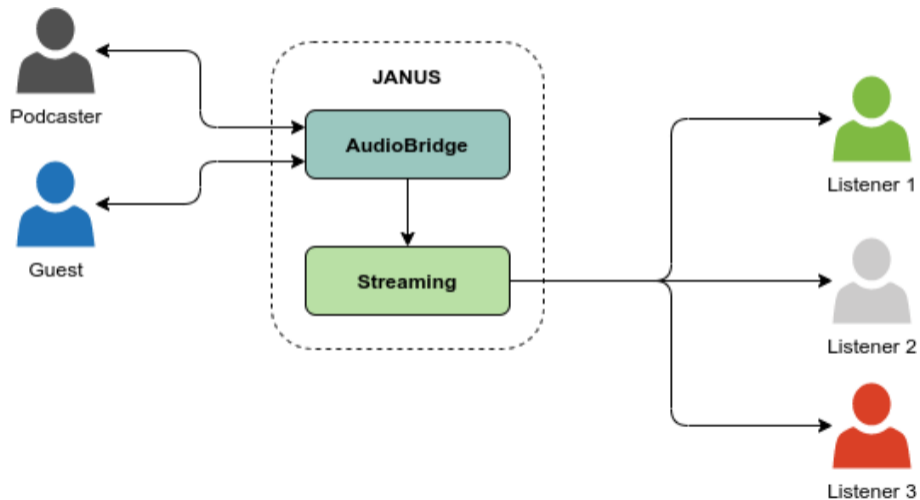
Using an MCU for the conversation (AudioBridge)



<https://archive.fosdem.org/2020/schedule/event/janus/>

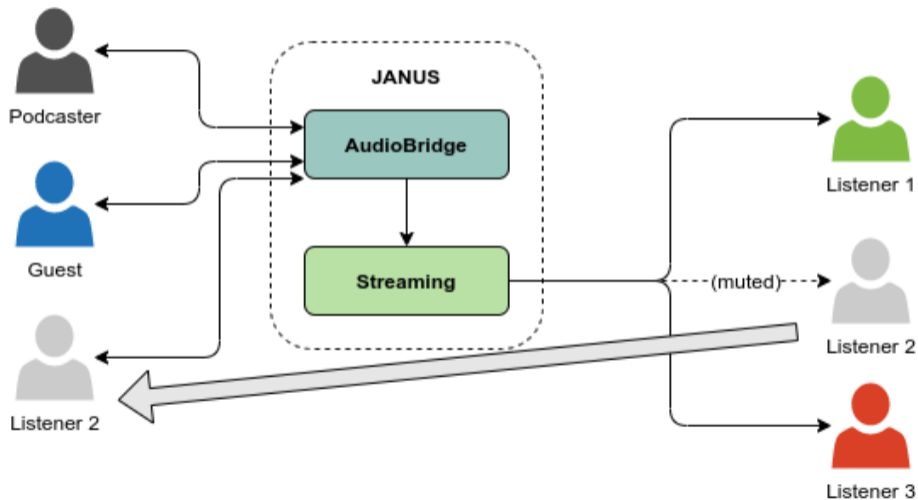


Distributing the MCU conversation via WebRTC



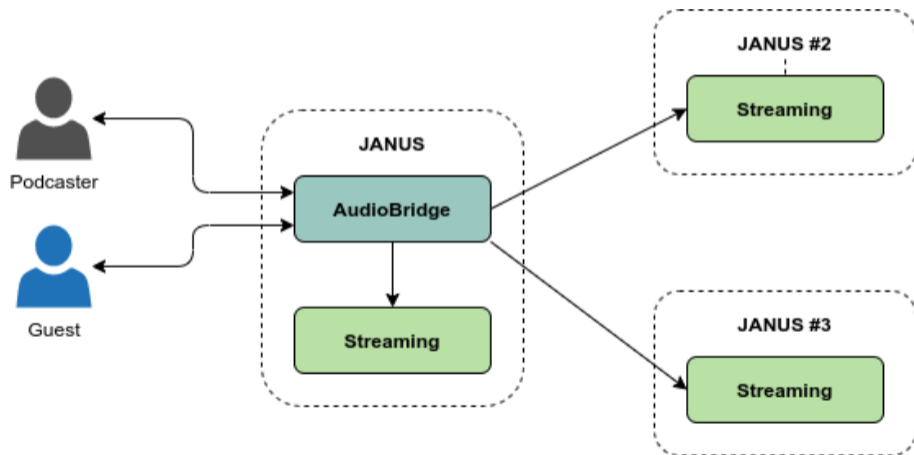


Distributing the MCU conversation via WebRTC



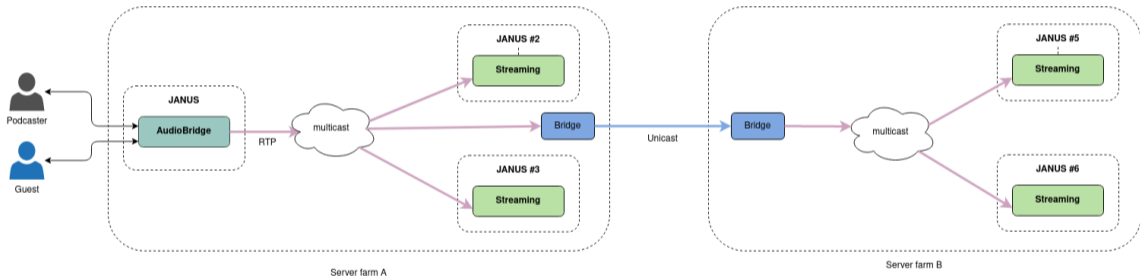


Distributing the MCU conversation via WebRTC



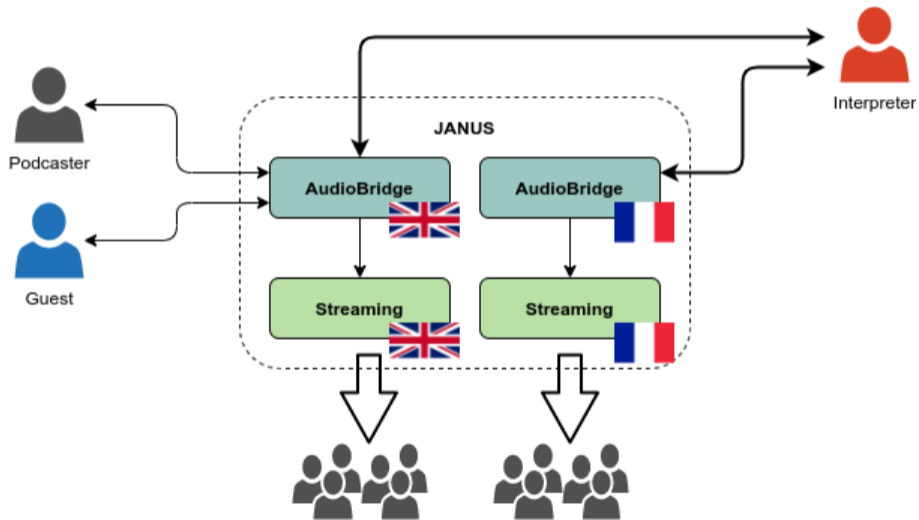


Distributing the MCU conversation via WebRTC



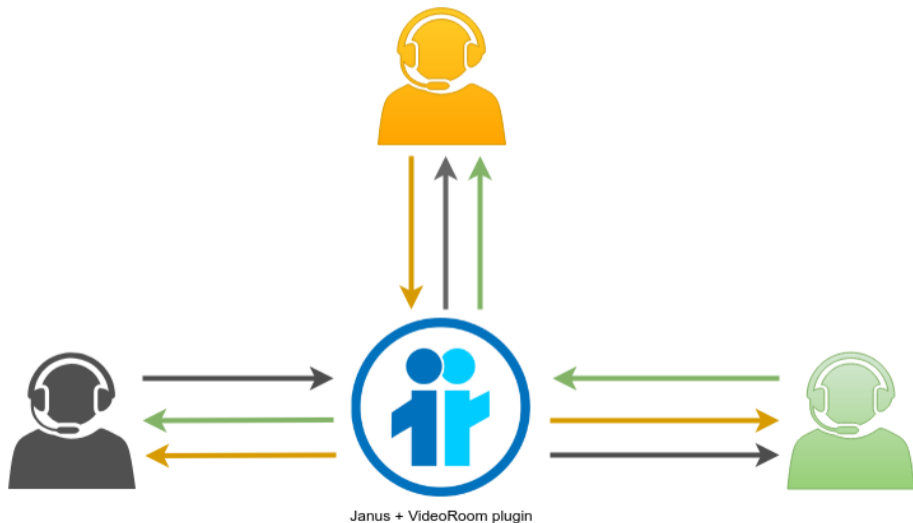


Distributing the MCU conversation via WebRTC



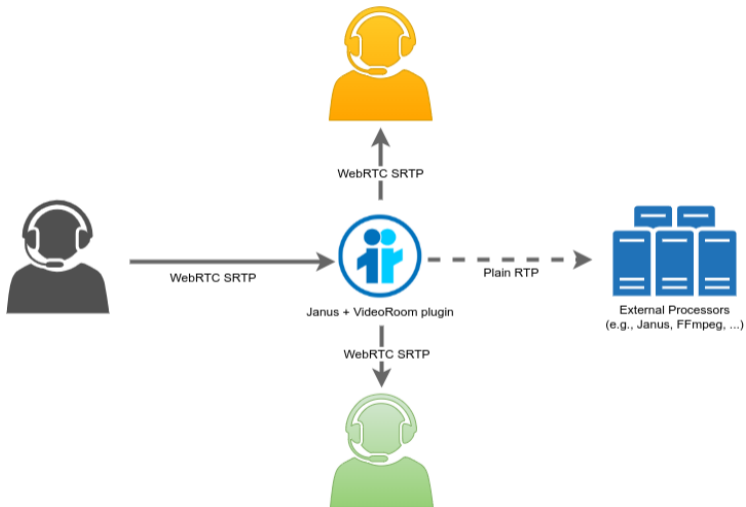


Using an SFU for the conversation (VideoRoom)



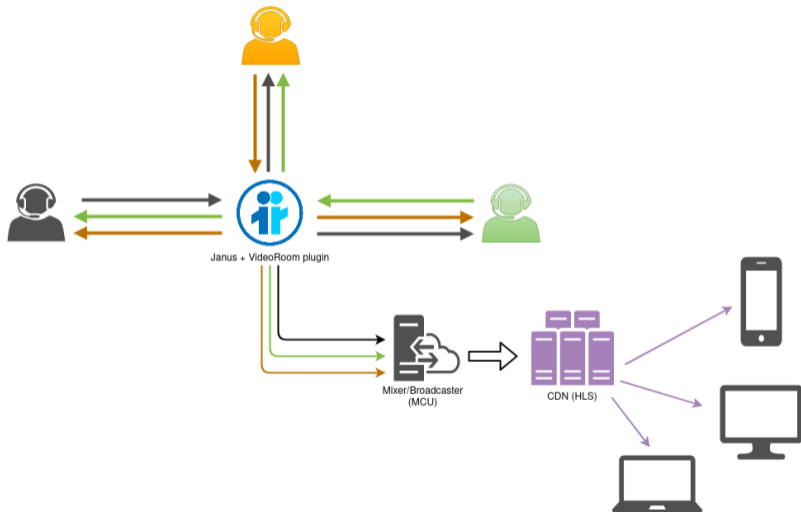


Using an SFU for the conversation (VideoRoom)



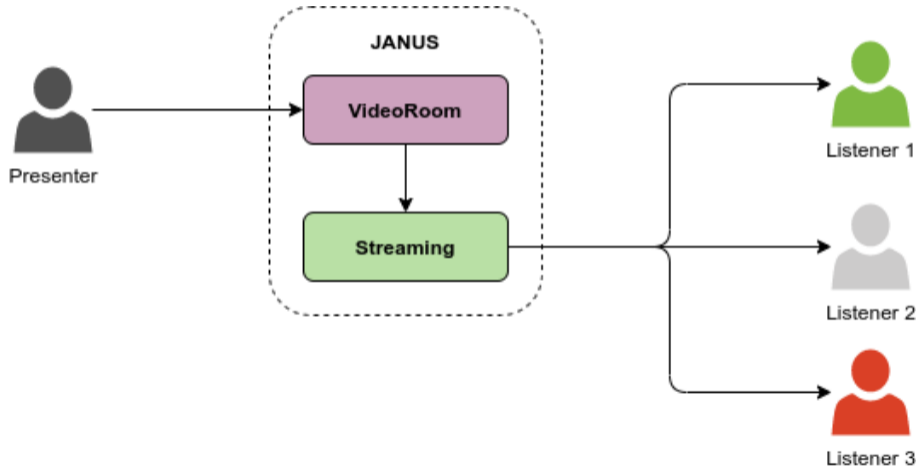


Using an SFU for the conversation (VideoRoom)



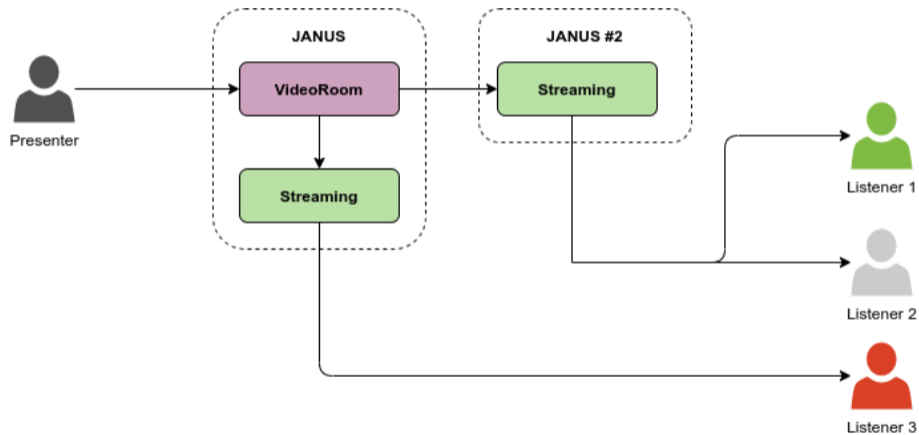


Distributing the SFU conversation via WebRTC



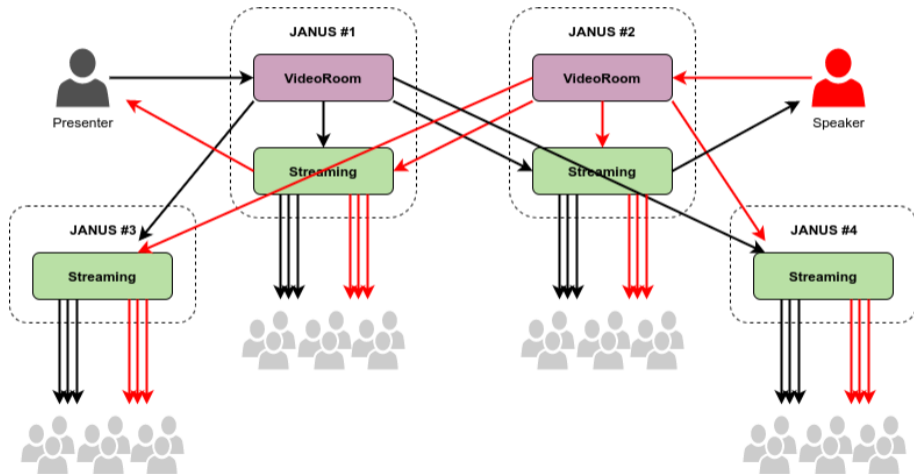


Distributing the SFU conversation via WebRTC



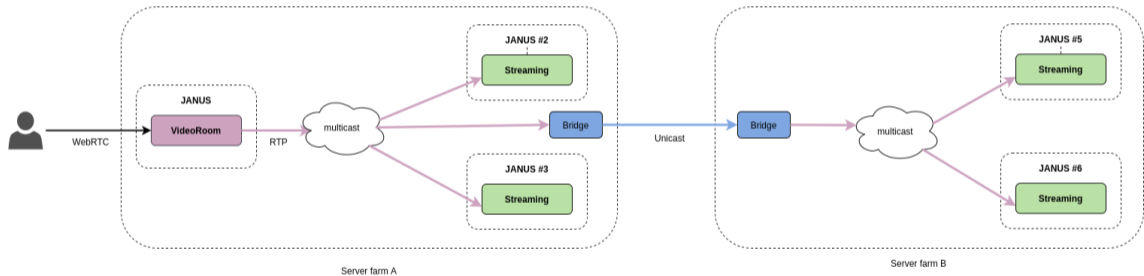


Distributing the SFU conversation via WebRTC





Distributing the SFU conversation via WebRTC





Too fast? 😞 Read more about this here!




Meetecho Blog Home Categories Website Search

Home / Janus / Social audio applications with Janus

Social audio applications with Janus

November 21, 2022 Lorenzo Miniero



Recent Posts

- Playing with Lyra
- Social audio applications with Janus
- Bridging AudioBridge and SIP with Drachtio
- WHIP, WHEP, WHAP!
- Cascading publishers across VideoRoom instances
- Multistream is here!
- WISH, WHIP and Janus: Part II
- Tinkering with AV1-SVC support in Janus
- Audio redundancy in Janus via RED
- WebRTC + NDI: Part II

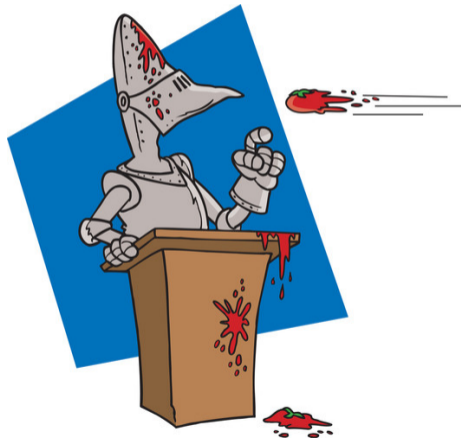
Archives

- December 2022
- November 2022
- October 2022
- September 2022
- July 2022
- February 2022
- October 2021
- August 2021

<https://www.meetecho.com/blog/social-audio/>



Thanks! Questions? Comments?



Contacts

-  <https://fosstodon.org/@lminiero>
-  <https://twitter.com/elminiero>
-  <https://twitter.com/meetecho>
-  <https://www.meetecho.com/blog/>