

Decentralized WebRTC

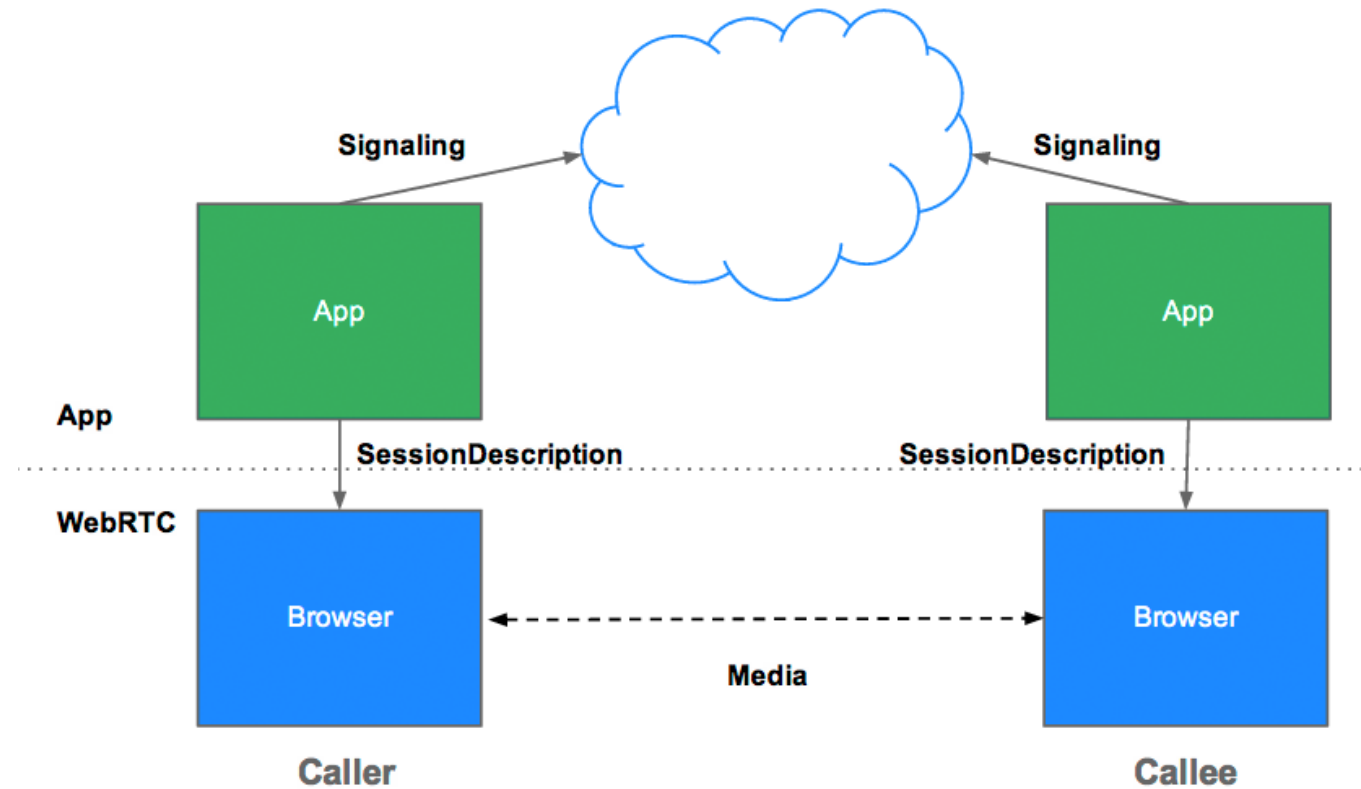
PAU ARGELAGUET FRANQUELO – JANUARY 2018



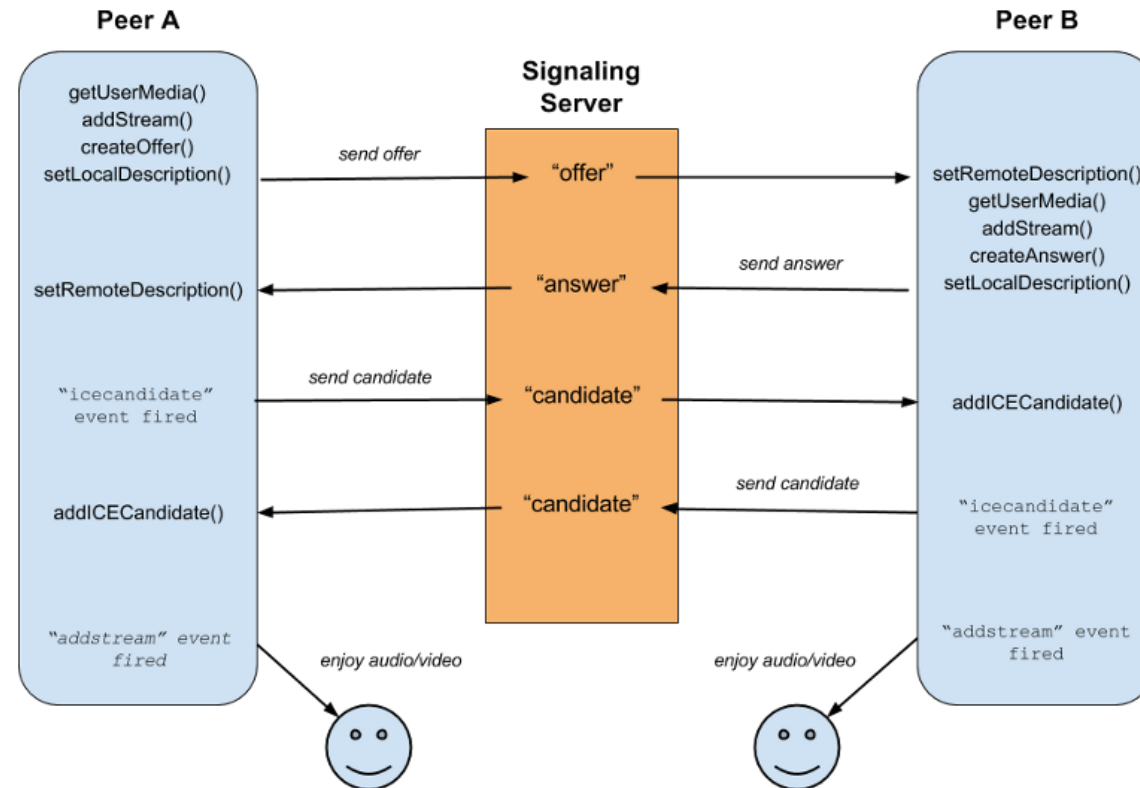
WebRTC

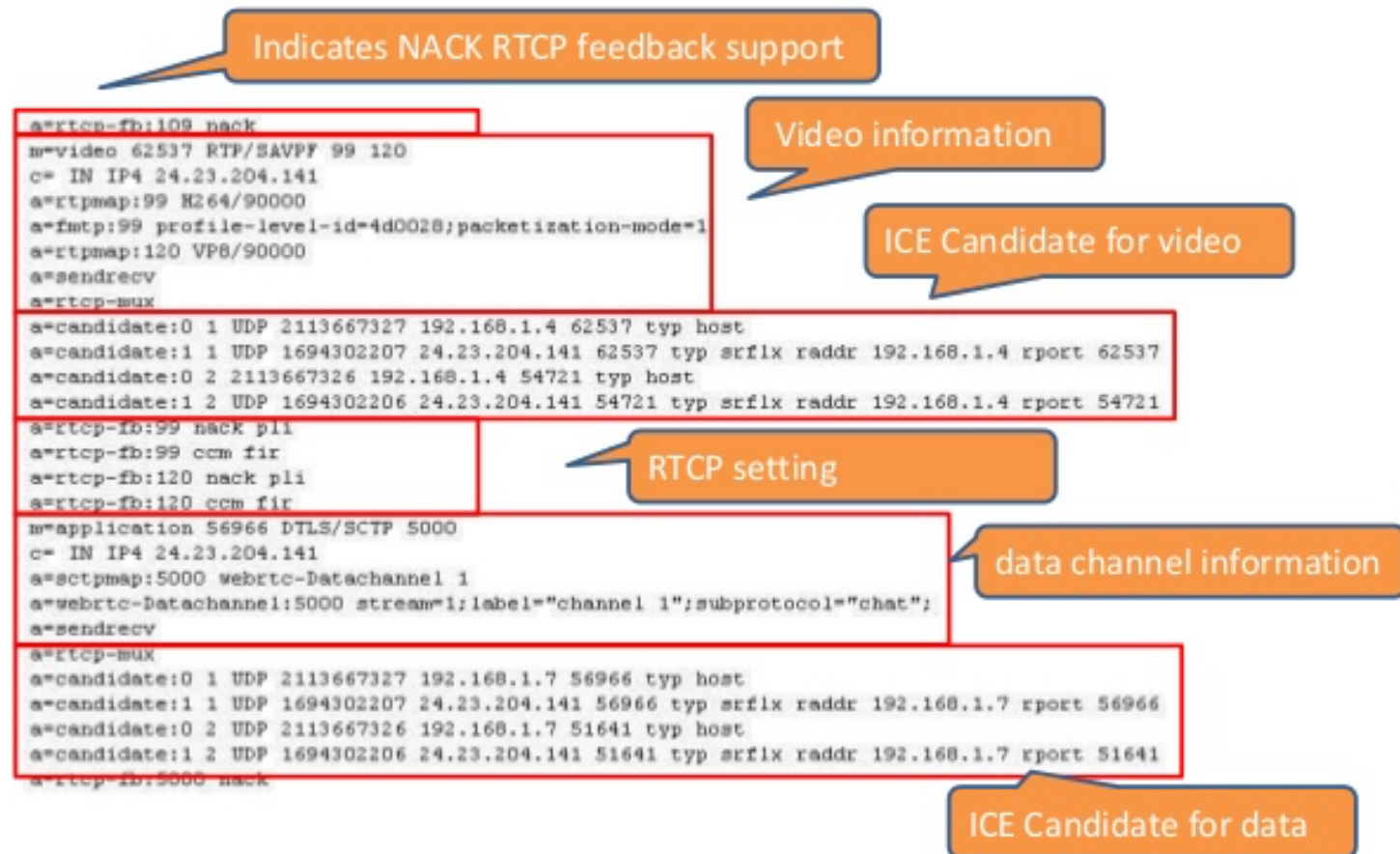
- Peer to peer communication in the browser
- Video, audio, data
- Encrypted
- Plugin-free
- Pure HTML(5) and JS
- Cross-platform
- Not 100% decentralized -> LET'S MAKE IT DECENTRALIZED

Signaling



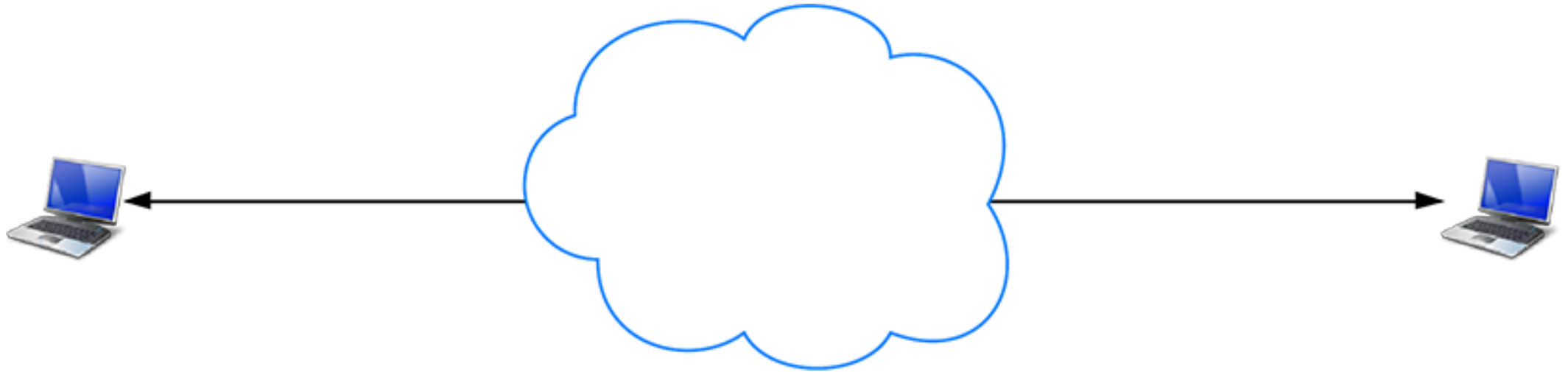
Signaling



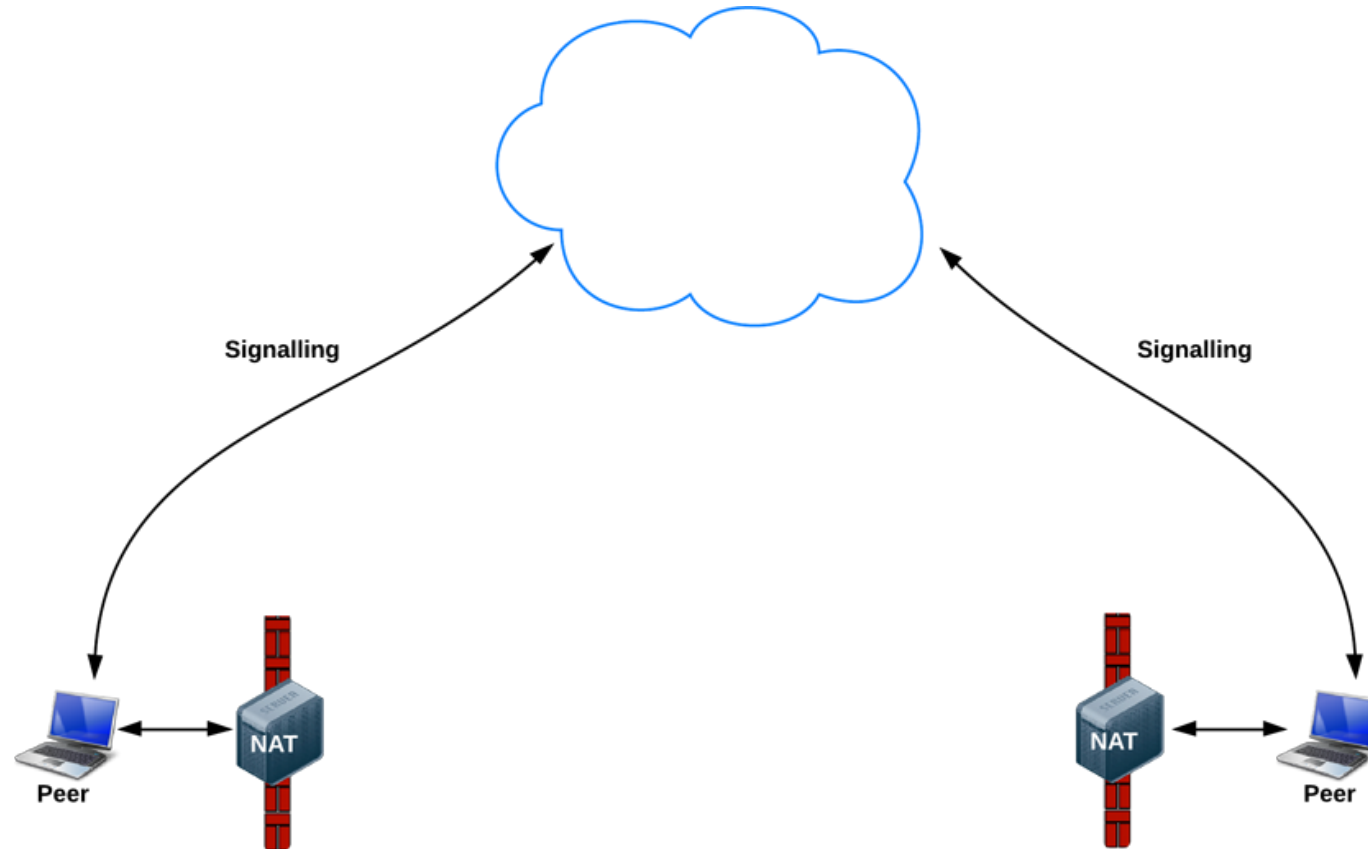


- <http://tools.ietf.org/id/draft-nandakumar-rtcweb-sdp-01.html#rfc.section.5>

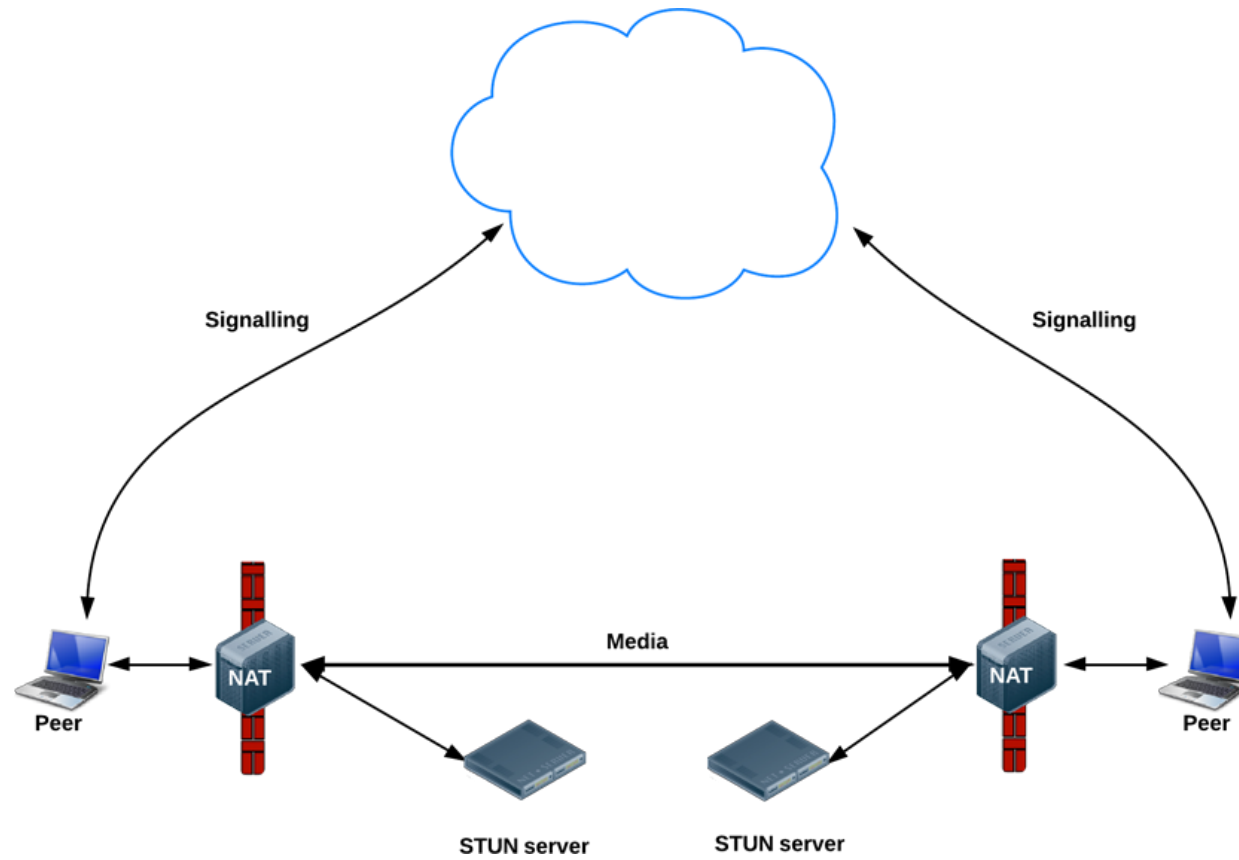
Nice, right?



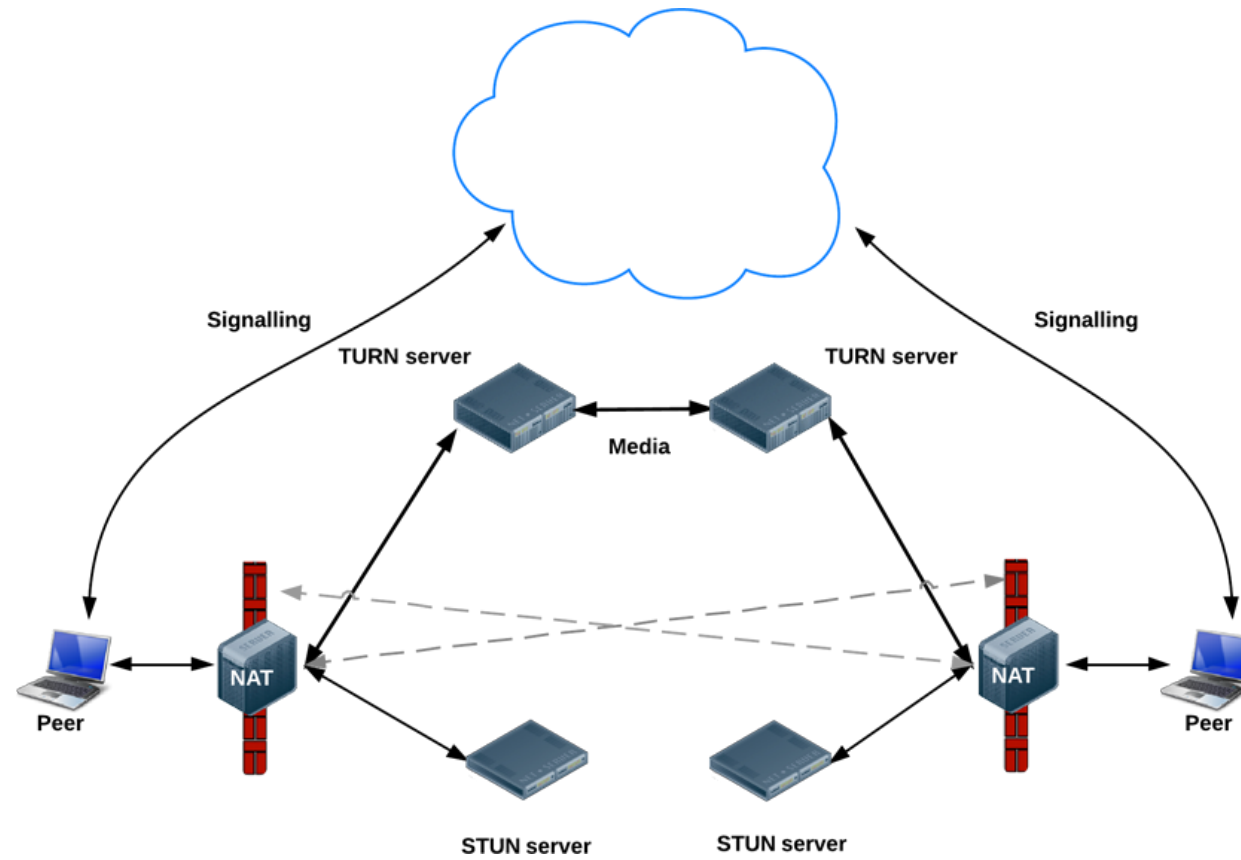
...not in the real world



STUN



TURN



The Goal

- Video and audio chat
- Screen sharing
- Text chat
- File sharing
- Decentralized!

Background

- WebRTC does not implement signaling
- WebRTC does not implement STUN
- WebRTC does not implement TURN
- Although...

The solution

FRONT-END

- Webpage in localhost
- Modern browser
- Websockets
- SSL
- **HTML5 + JS + CSS**
- **(+ jQuery, Bootstrap)**

BACK-END

- Gossip network node
- STUN server (stund implementation)
- TURN server (coturn implementation)
- **Go**

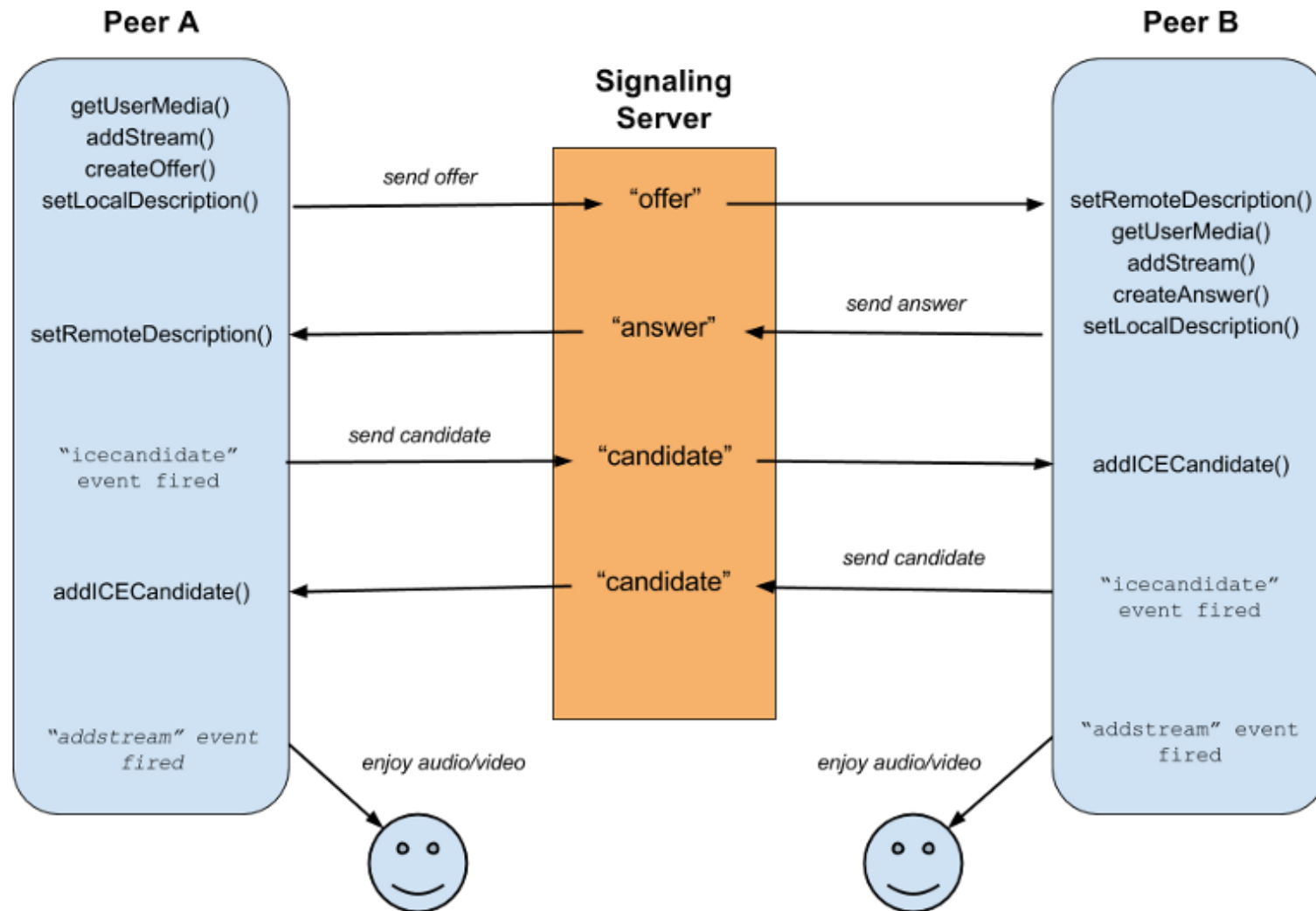
Front-end

IN ACTIVE CALL

- Peer audio/video
- Own video
- Screen sharing
- Text chat
- File sharing

NOT IN ACTIVE CALL

- See known users
- See known peers
- Add peer
- Start a call
- Receive a call



Some changes to Peerster

- Only route messages, privates and status.
- Not storing messages.
- Rumor messages, file sharing, private messages removed.
- CLI removed.
- Peer deletion.
- Listen to 0.0.0.0

DEMO
