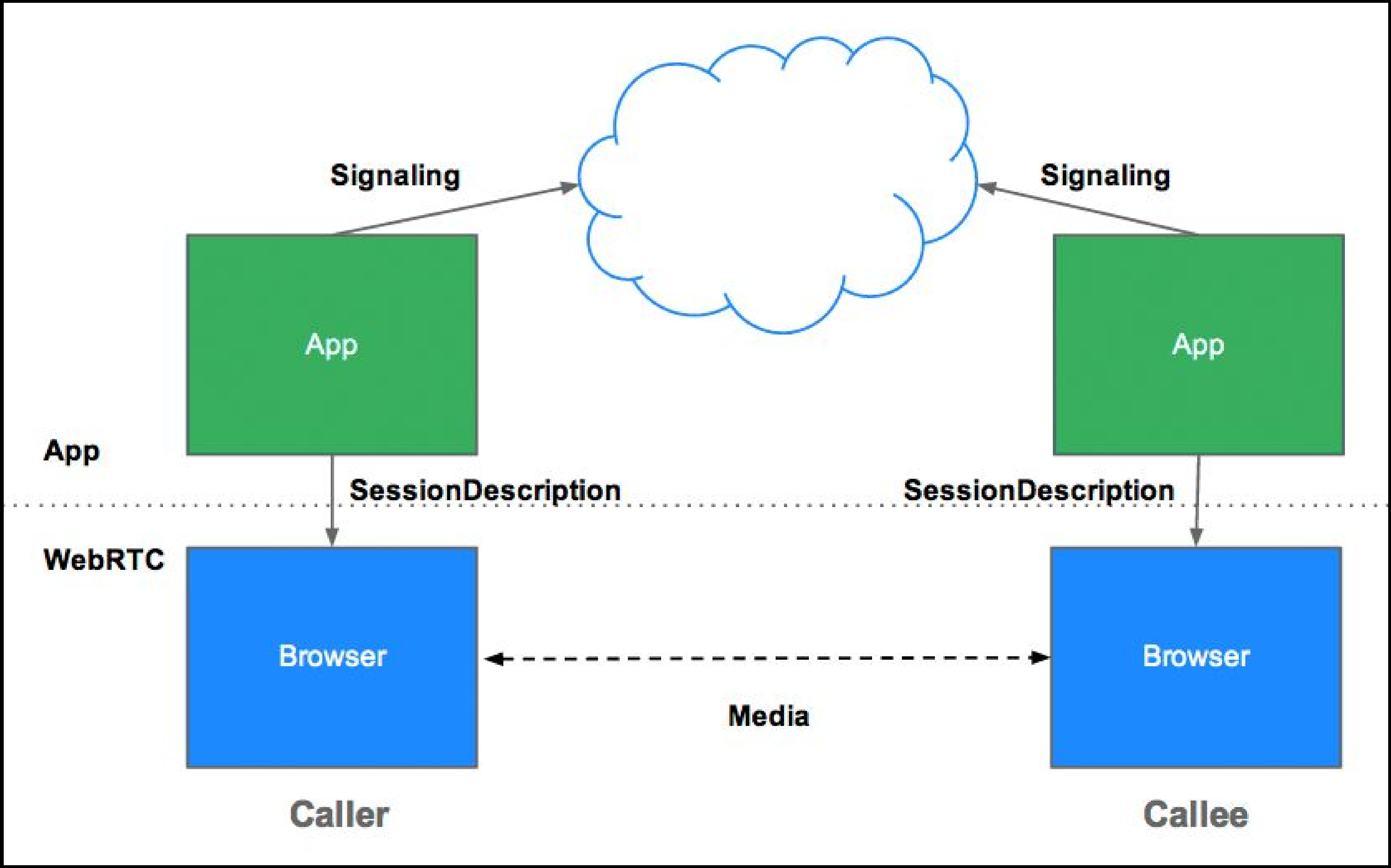
WebRTC

A Brief Overview

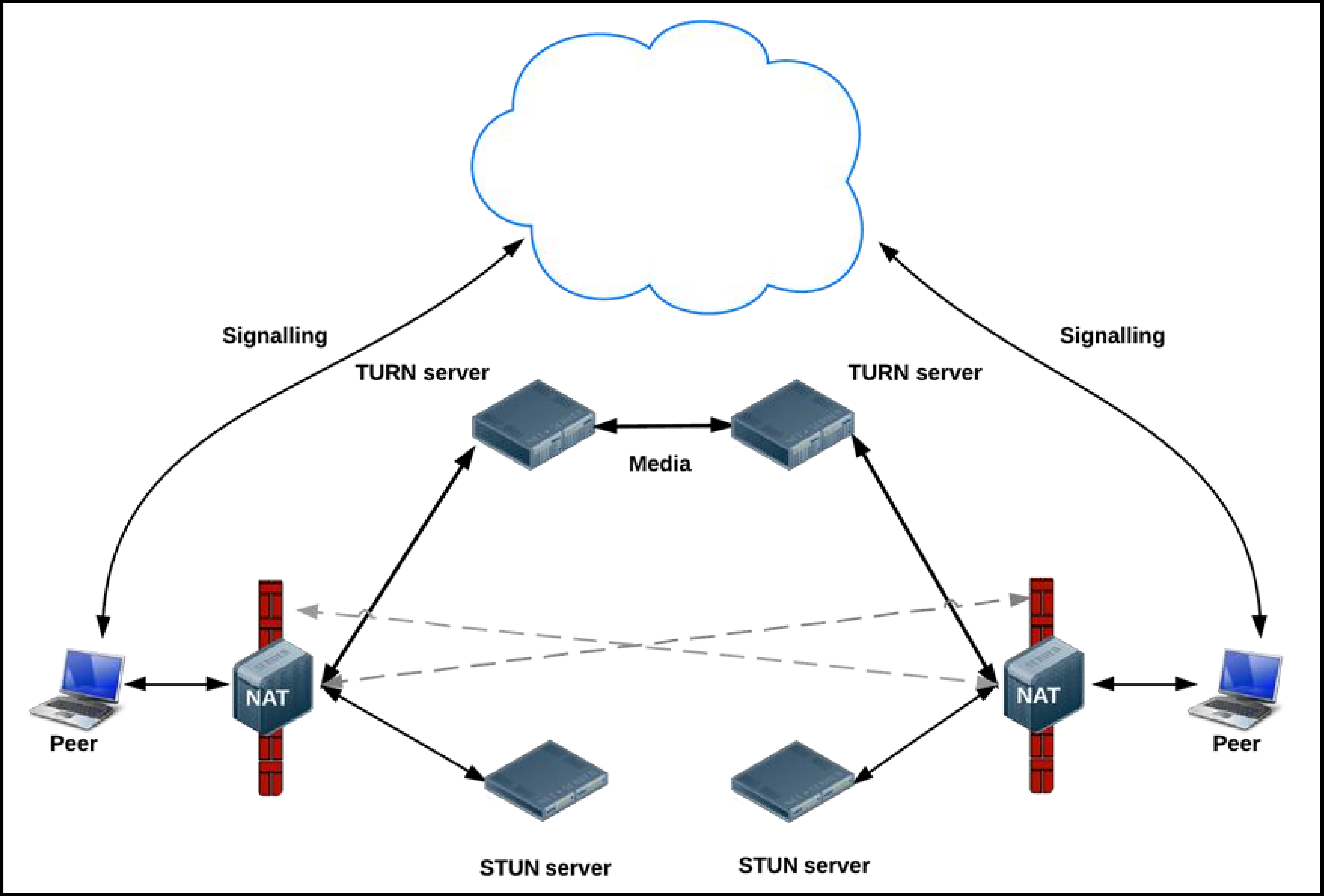
What is it?

- MediaStream (aka GetUserMedia)
- RTCPeerConnection
- RTCDataChannel

Ideal Diagram



Typical Diagram



Detail of SDP

https://webrtchacks.com/sdp-anatomy/

Anatomy of a WebRTC SDP

Behold the wonders and perils of a Session Description Protocol (SDP) generated by Chrome for WebRTC! See the source post by Antón Román for more background and commentary.

Global Lines

o=- 4611731400430051336 2 IN IP4 127.0.0.1

s=-

t=0 0

a=group:BUNDLE audio video

a=msid-semantic: WMS lgsCFqt9kN2fVKw5wg3NKqGdATQoltEwOdMS

Audio Lines

m=audio 58779 UDP/TLS/RTP/SAVPF 111 103 104 9 0 8 106 105 13 126

c=IN IP4 217.130.243.155

a=rtcp:51472 IN IP4 217.130.243.155

Global Lines

s=-

The s line contains a textual session name, which is not commonly used as you can see here.

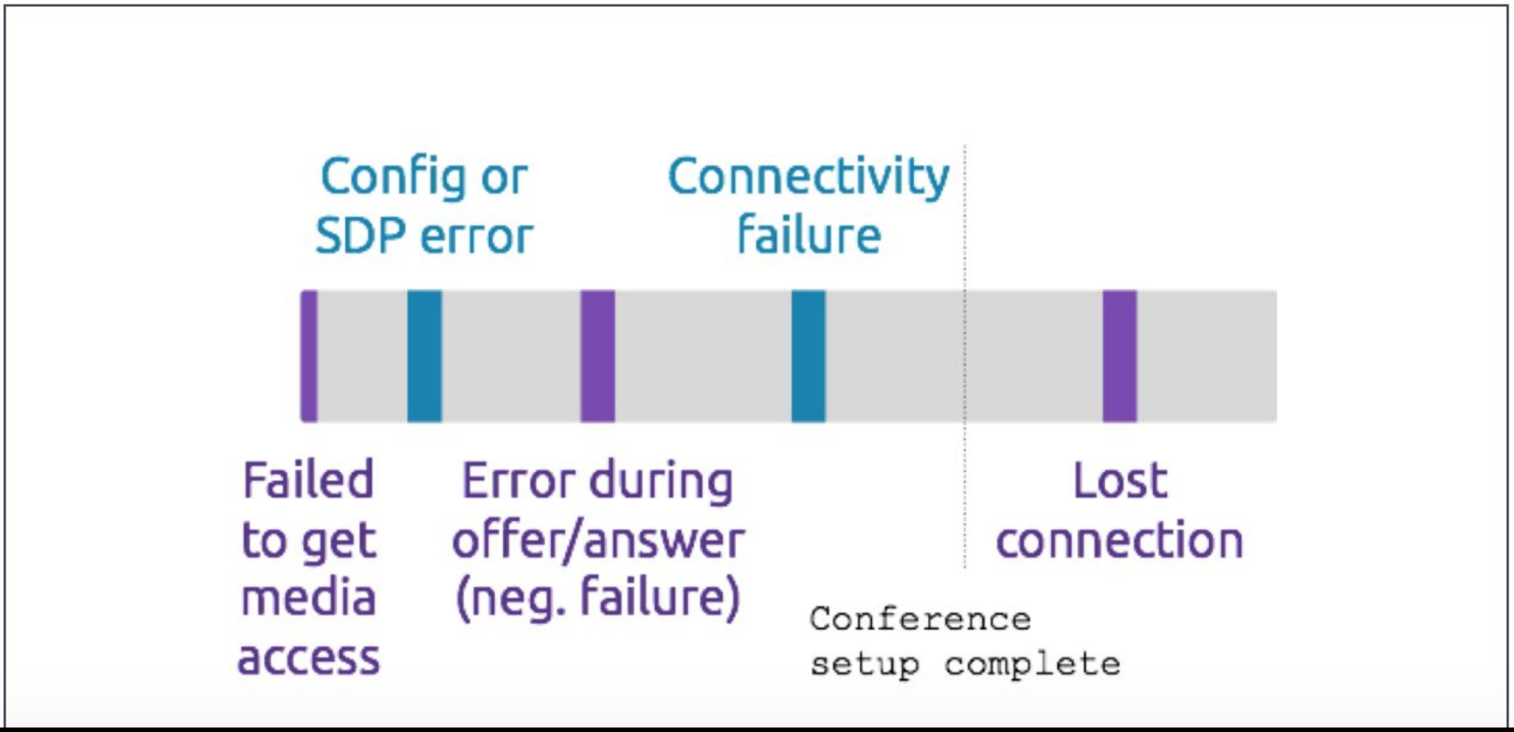
Pitfalls

https://webrtchacks.com/usage-stats/

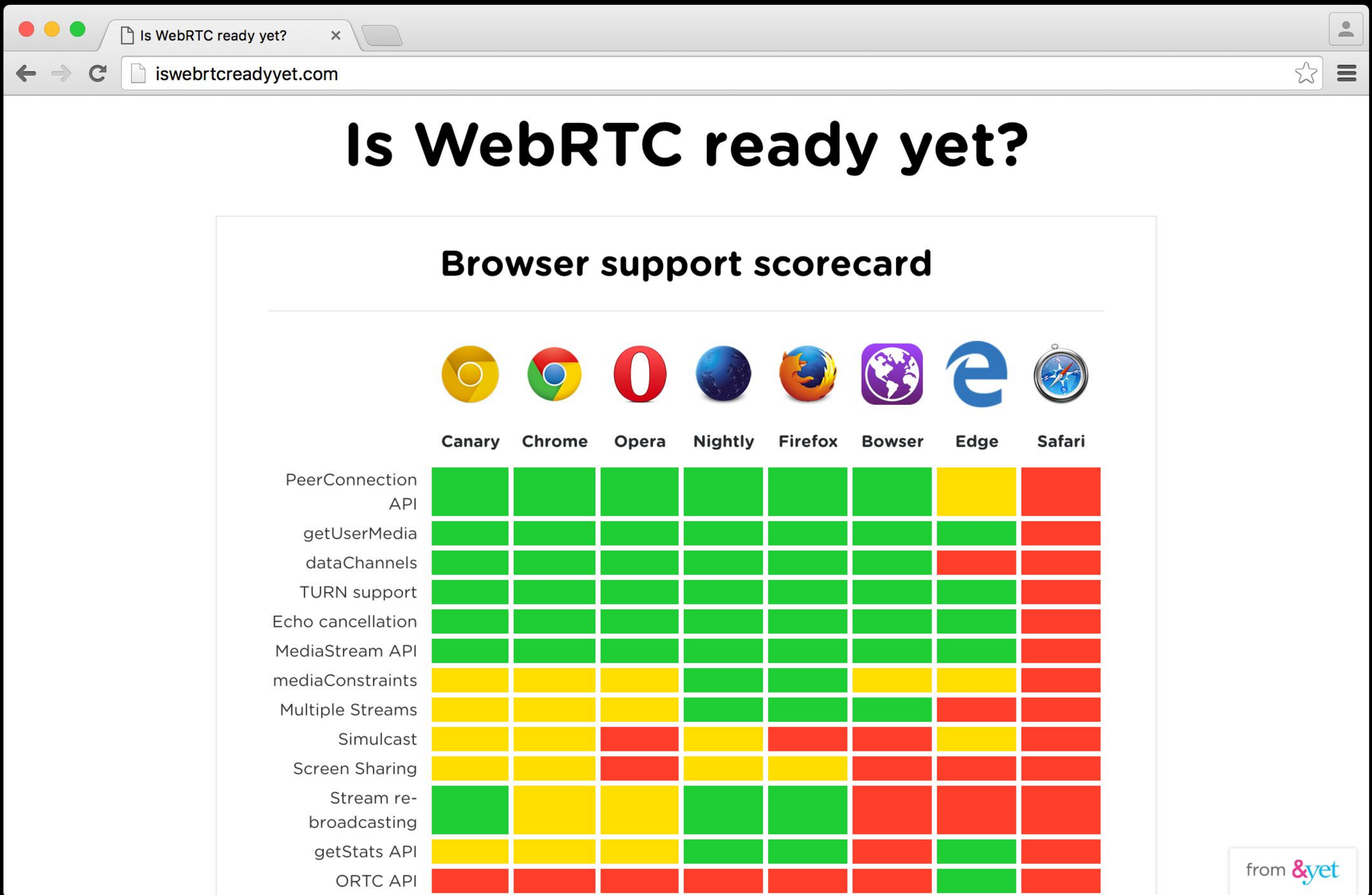
Failures

The following are metrics as observed by callstats.io, these metrics are primarily gathered from the browser including Firefox and Chrome for Android.

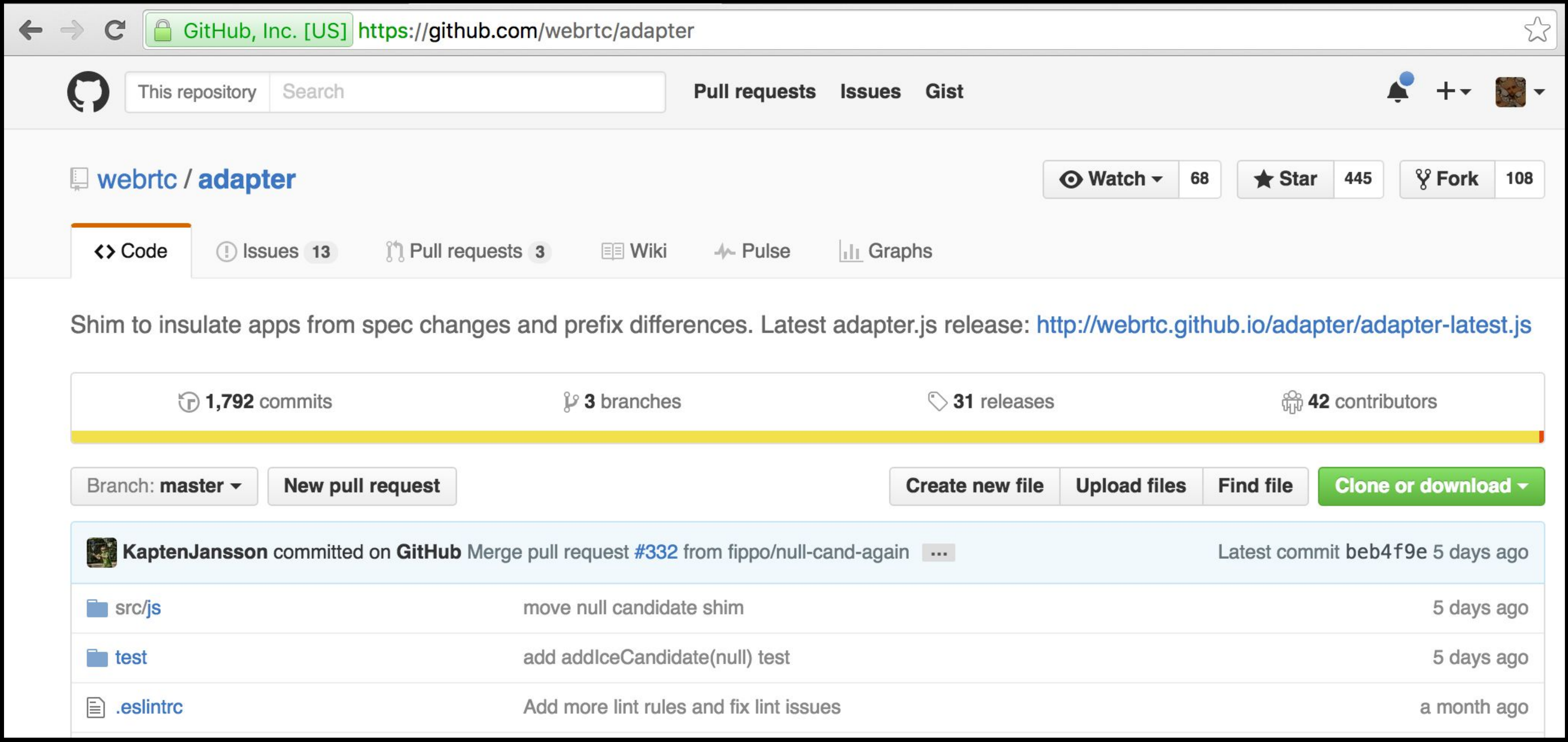
In the WebRTC services that we observe, the failure rate is on average 12%, i.e., 1 in 8 sessions are never set up. However, most failures (85%) come from the inability of an endpoint to traverse NATs or firewalls successfully. That problem can be usually fixed by deploying relay servers and we already observe that 22% of the conferences need some kind of TURN relay server. About 9% of the conferences required TCP, which may not be the best transport for media quality but is better than failing to establish the session. However, it would be remiss not to point out that not all our customers use a TURN/TCP or TURN/TLS. Ergo, the failure rate may still be indicative of not having the complete suite of relays in place.



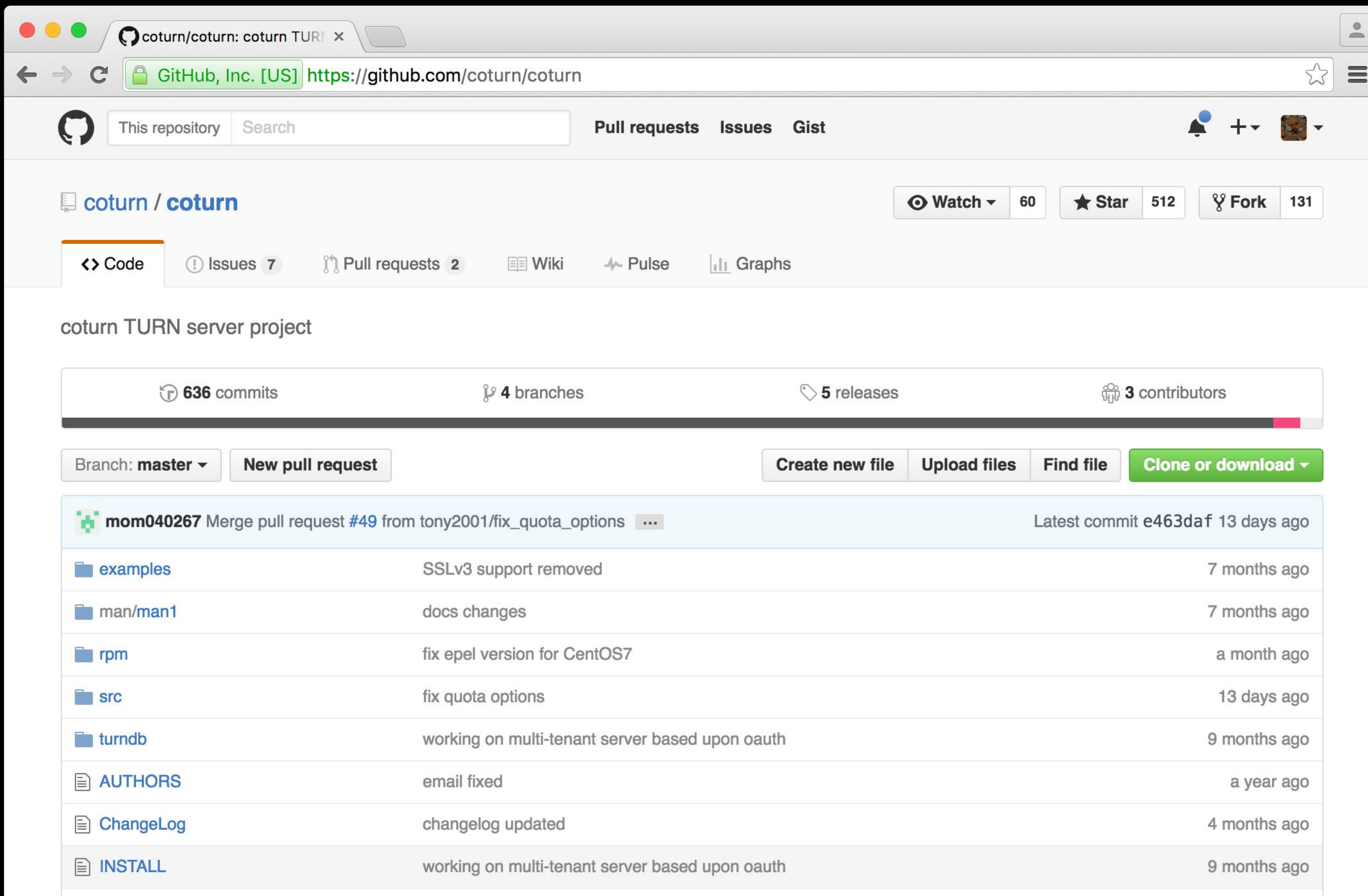
Browser Support



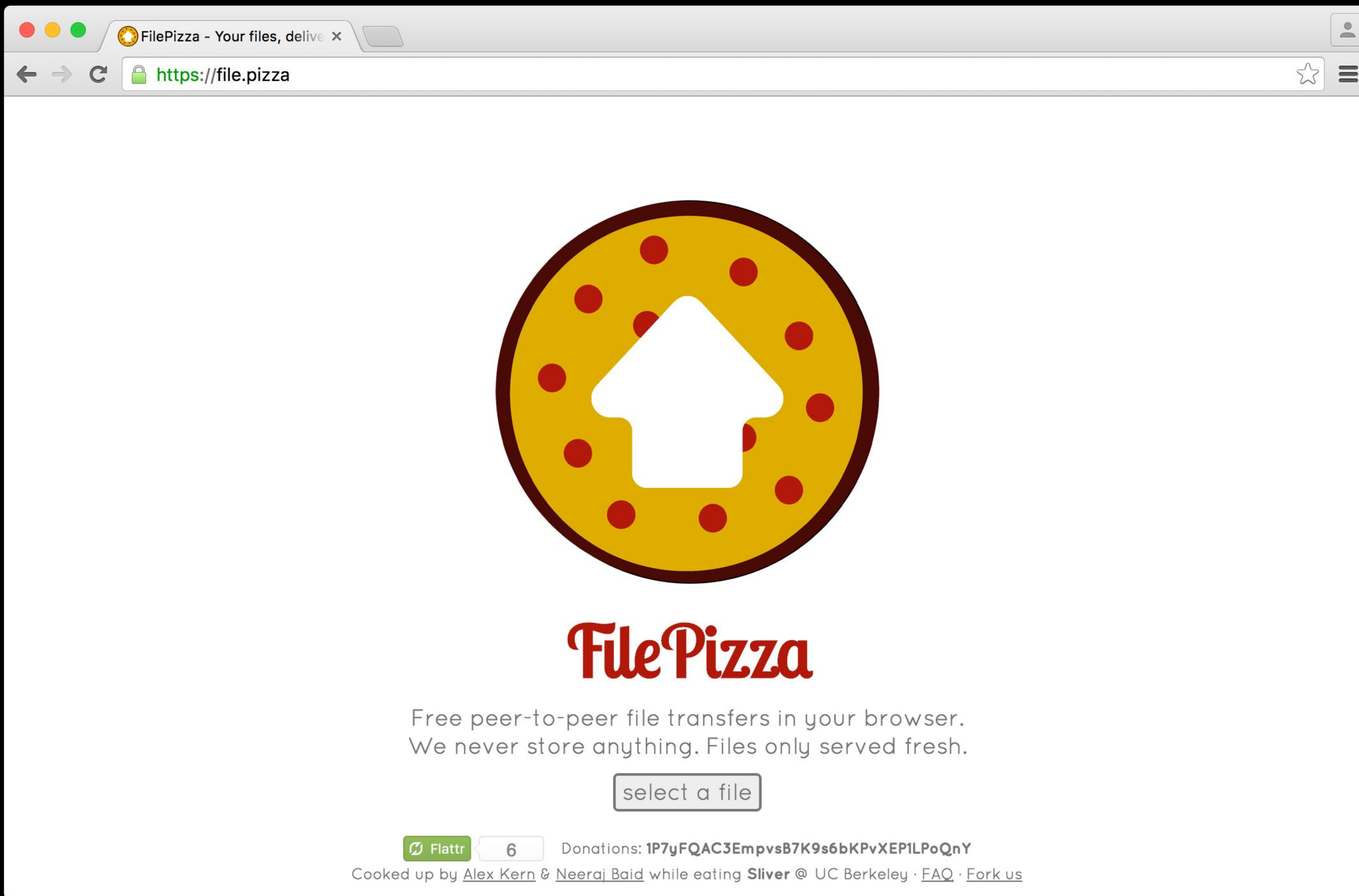
adapter.js shim



coturn TURN Server



Example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