

WebRTC

A Brief Overview

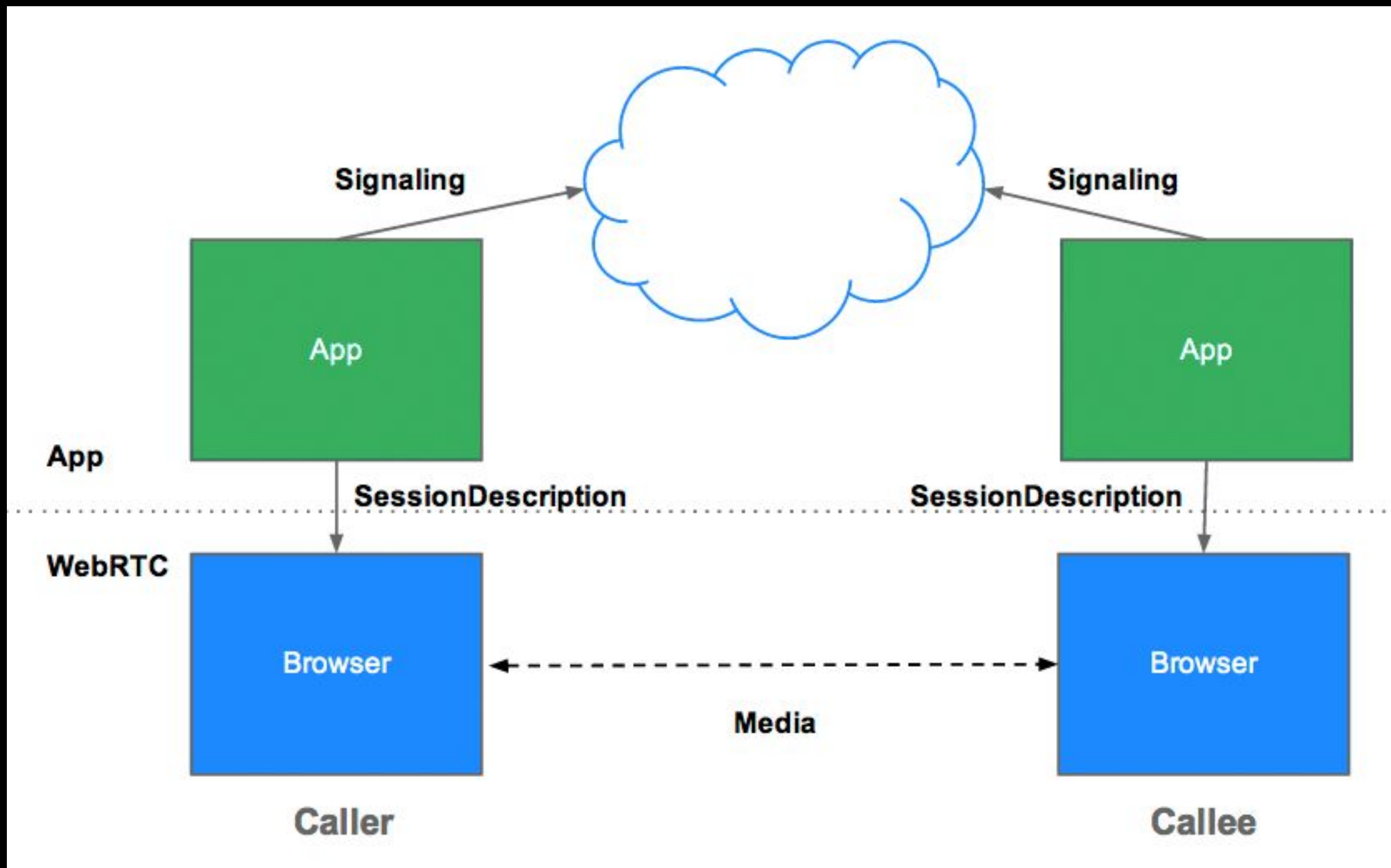


WebRTC

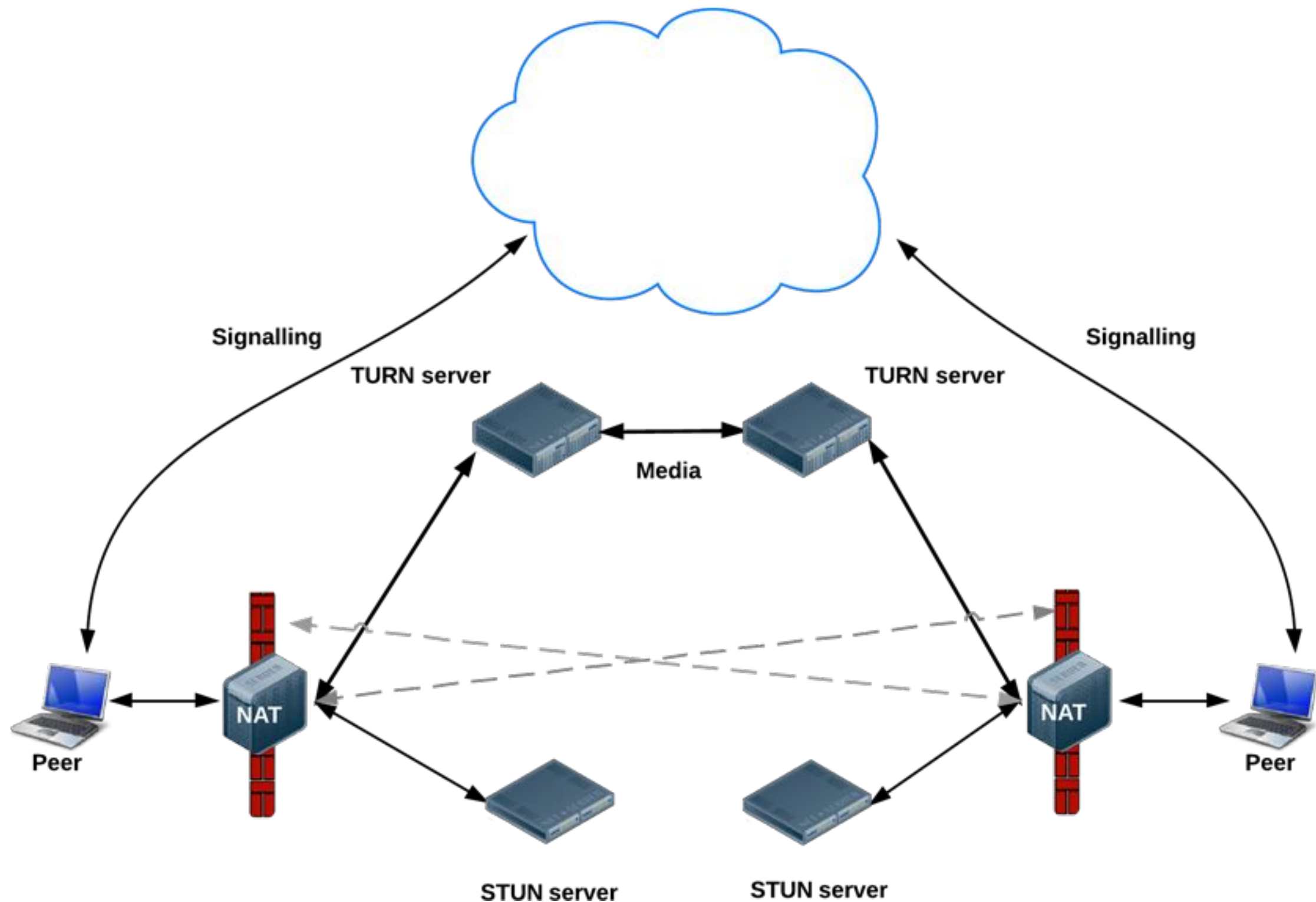
What is it?

- `MediaStream` (aka `getUserMedia`)
- `RTCPeerConnection`
- `RTCDataChannel`

Ideal Diagram



Typical Diagram



Detail of SDP

← → ↺ <https://webrtcchacks.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://webrtcchacks.com/usage-stats/>

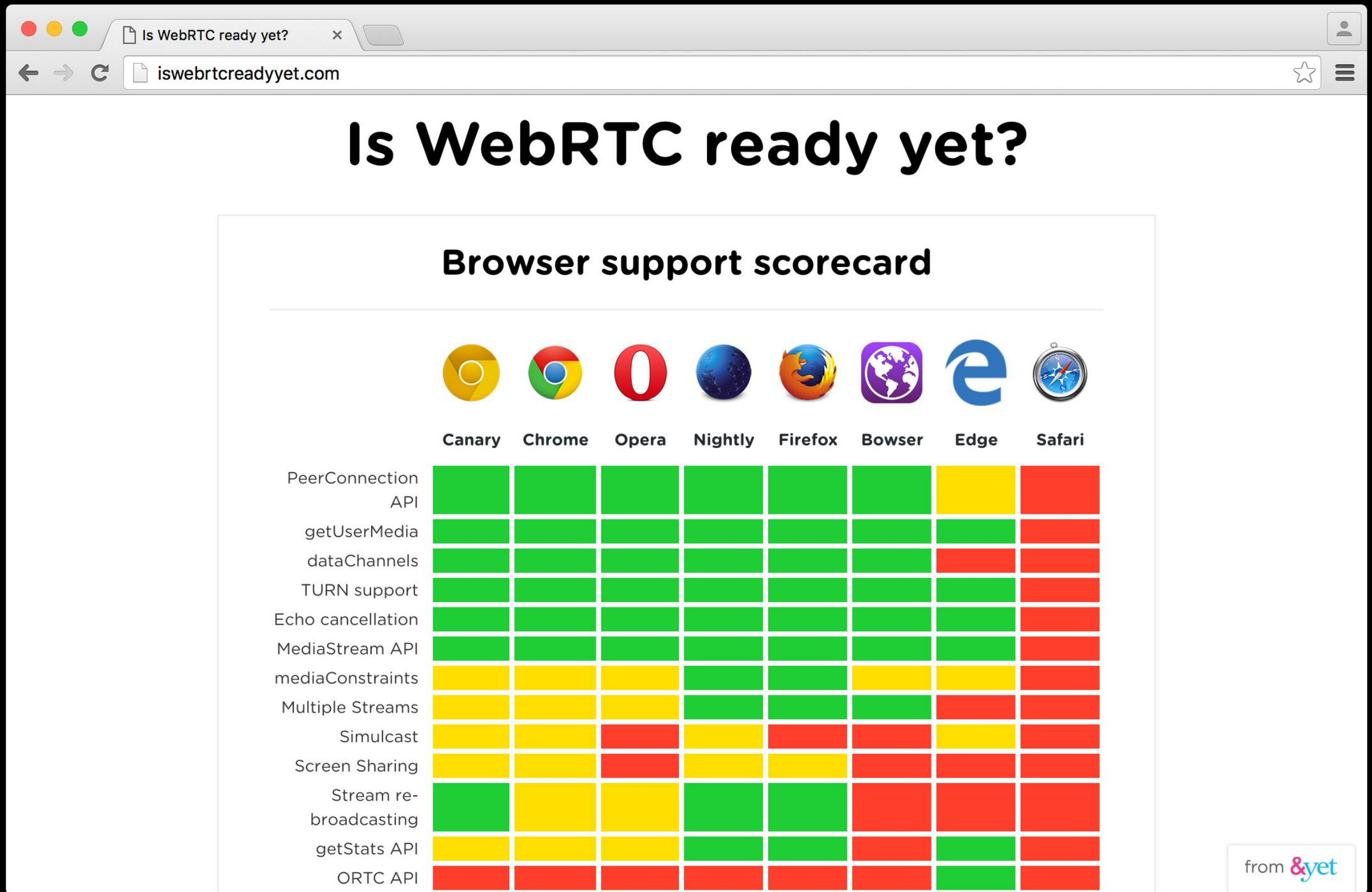
Failures

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.





Failure Category	Color
Failed to get media access	Purple
Config or SDP error	Blue
Error during offer/answer (neg. failure)	Grey
Connectivity failure	Blue
Conference setup complete	Grey
Lost connection	Purple


Browser Support



adapter.js shim





  <https://github.com/webrtc/adapter> 

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Shim to insulate apps from spec changes and prefix differences. Latest adapter.js release: <http://webrtc.github.io/adapter/adapter-latest.js>

 **1,792** commits  **3** branches  **31** releases  **42** contributors

[Branch: master](#) [New pull request](#) [Create new file](#) [Upload files](#) [Find file](#) [Clone or download](#)

 **KaptensJansson** committed on **GitHub** Merge pull request [#332](#) from fippo/null-cand-again [...](#) Latest commit beb4f9e 5 days ago

 src/js	move null candidate shim	5 days ago
 test	add addIceCandidate(null) test	5 days ago
 .eslintrc	Add more lint rules and fix lint issues	a month ago

coturn TURN Server

The screenshot shows the GitHub repository page for coturn/coturn. The browser address bar displays the URL https://github.com/coturn/coturn. The repository name is coturn / coturn. The page shows 60 watchers, 512 stars, and 131 forks. The repository is described as the coturn TURN server project. It has 636 commits, 4 branches, 5 releases, and 3 contributors. The current branch is master. A merge pull request #49 from tony2001/fix_quota_options is shown. The latest commit is e463daf, 13 days ago. The file list includes examples, man/man1, rpm, src, turndb, AUTHORS, ChangeLog, INSTALL, and LICENCE.

coturn/coturn: coturn TURN x

GitHub, Inc. [US] https://github.com/coturn/coturn

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coturn / coturn Watch 60 Star 512 Fork 131

Code Issues 7 Pull requests 2 Wiki Pulse Graphs

coturn TURN server project

636 commits 4 branches 5 releases 3 contributors

Branch: master New pull request Create new file Upload files Find file Clone or download

mom040267 Merge pull request #49 from tony2001/fix_quota_options Latest commit e463daf 13 days ago

examples	SSLv3 support removed	7 months ago
man/man1	docs changes	7 months ago
rpm	fix epel version for CentOS7	a month ago
src	fix quota options	13 days ago
turndb	working on multi-tenant server based upon oauth	9 months ago
AUTHORS	email fixed	a year ago
ChangeLog	changelog updated	4 months ago
INSTALL	working on multi-tenant server based upon oauth	9 months ago
LICENCE	initial code commit	2 years ago

Example

