

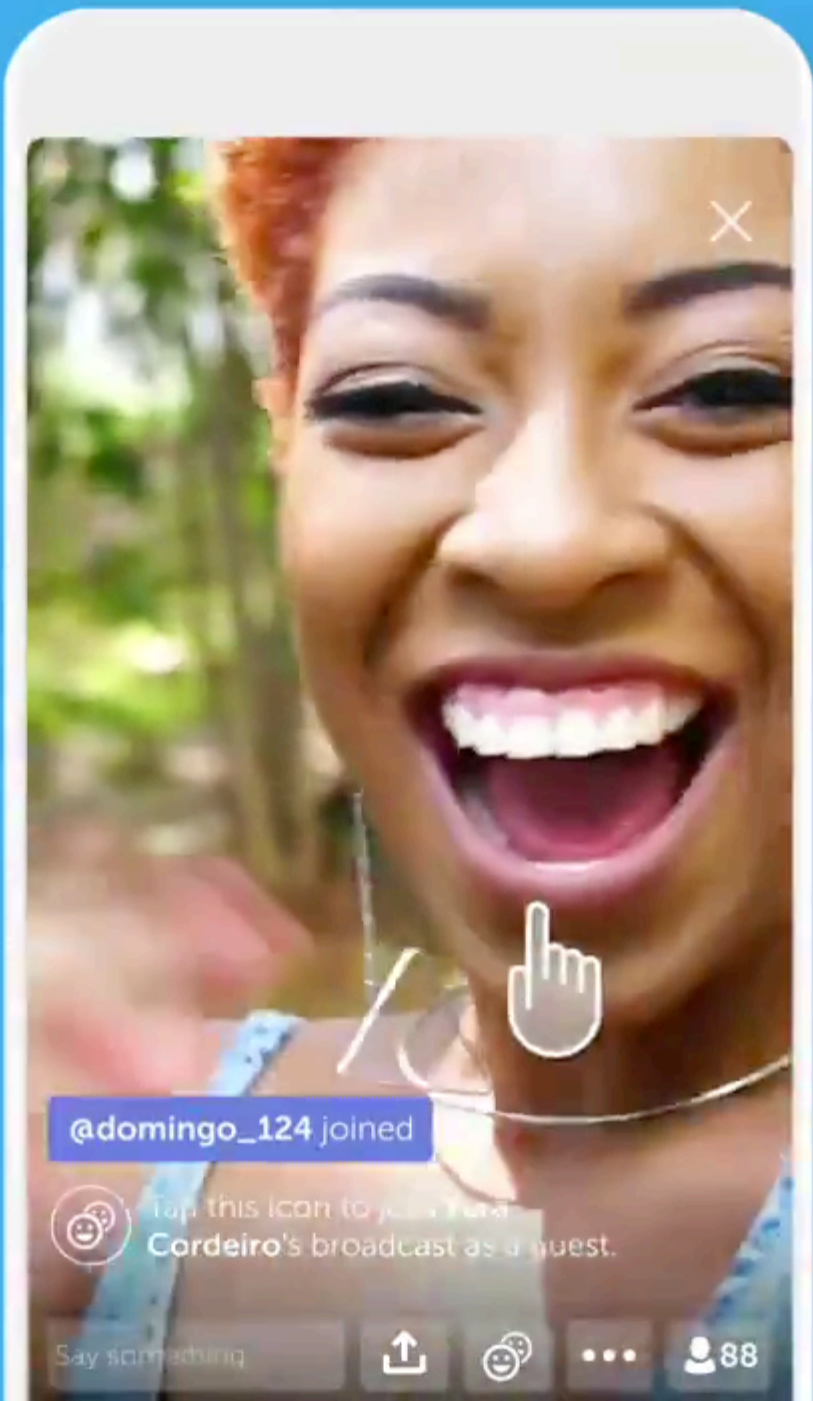
Broadcasting WebRTC Group Chats

Twitter

Can Bal

cbal@twitter.com

Staff Software Engineer



@domingo_124 joined

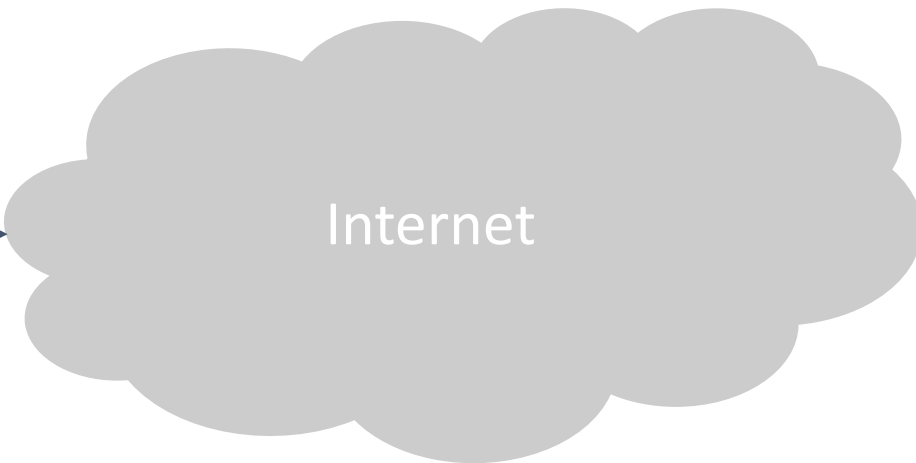
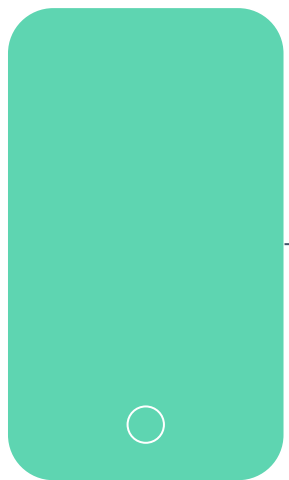


Tap this icon to join Yara Cordeiro's broadcast as a guest.

Say something



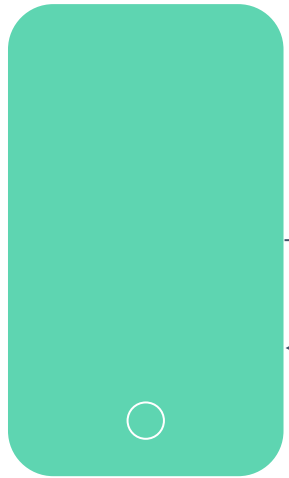
88





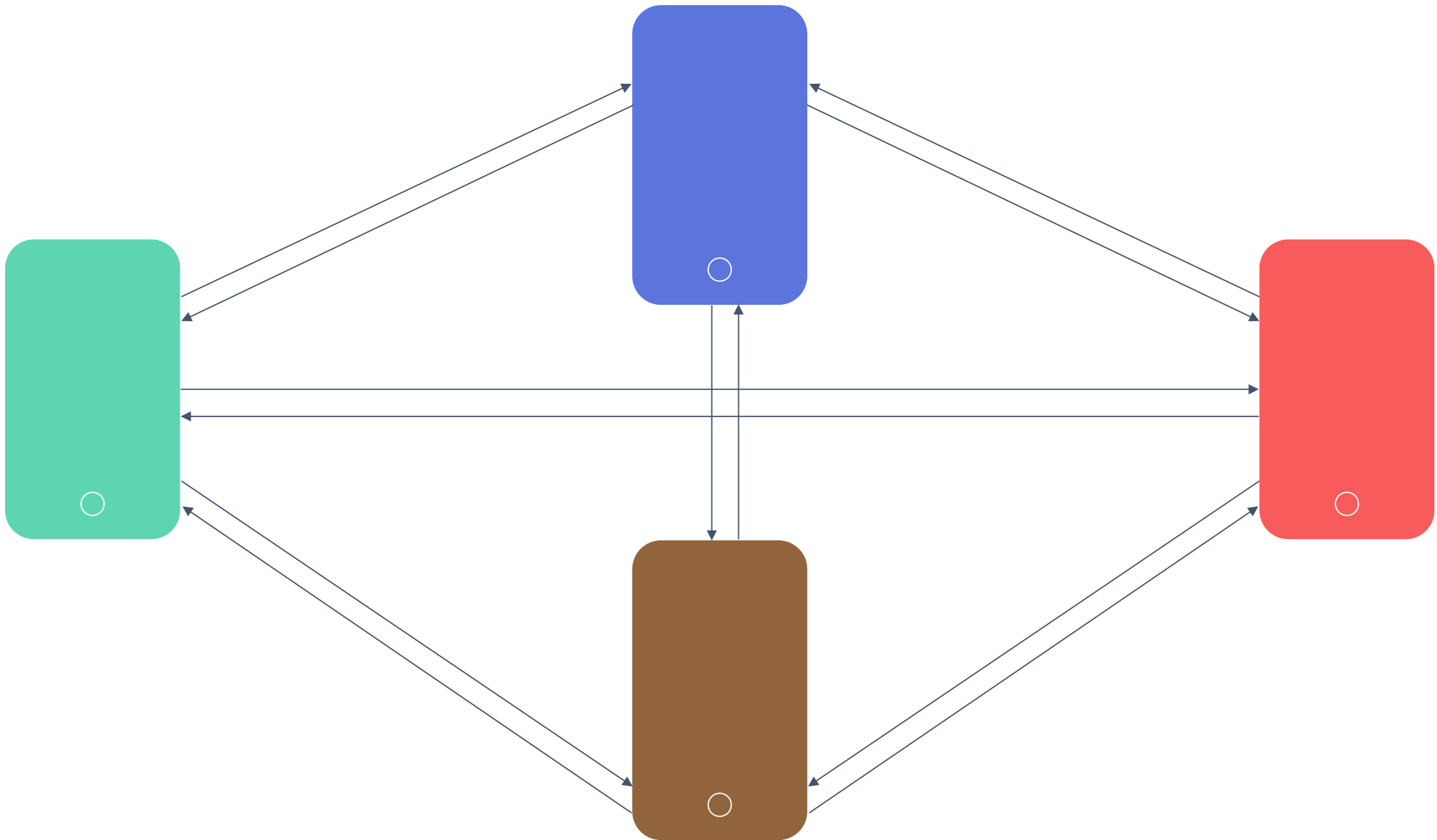
Discovery of IP:Port combinations

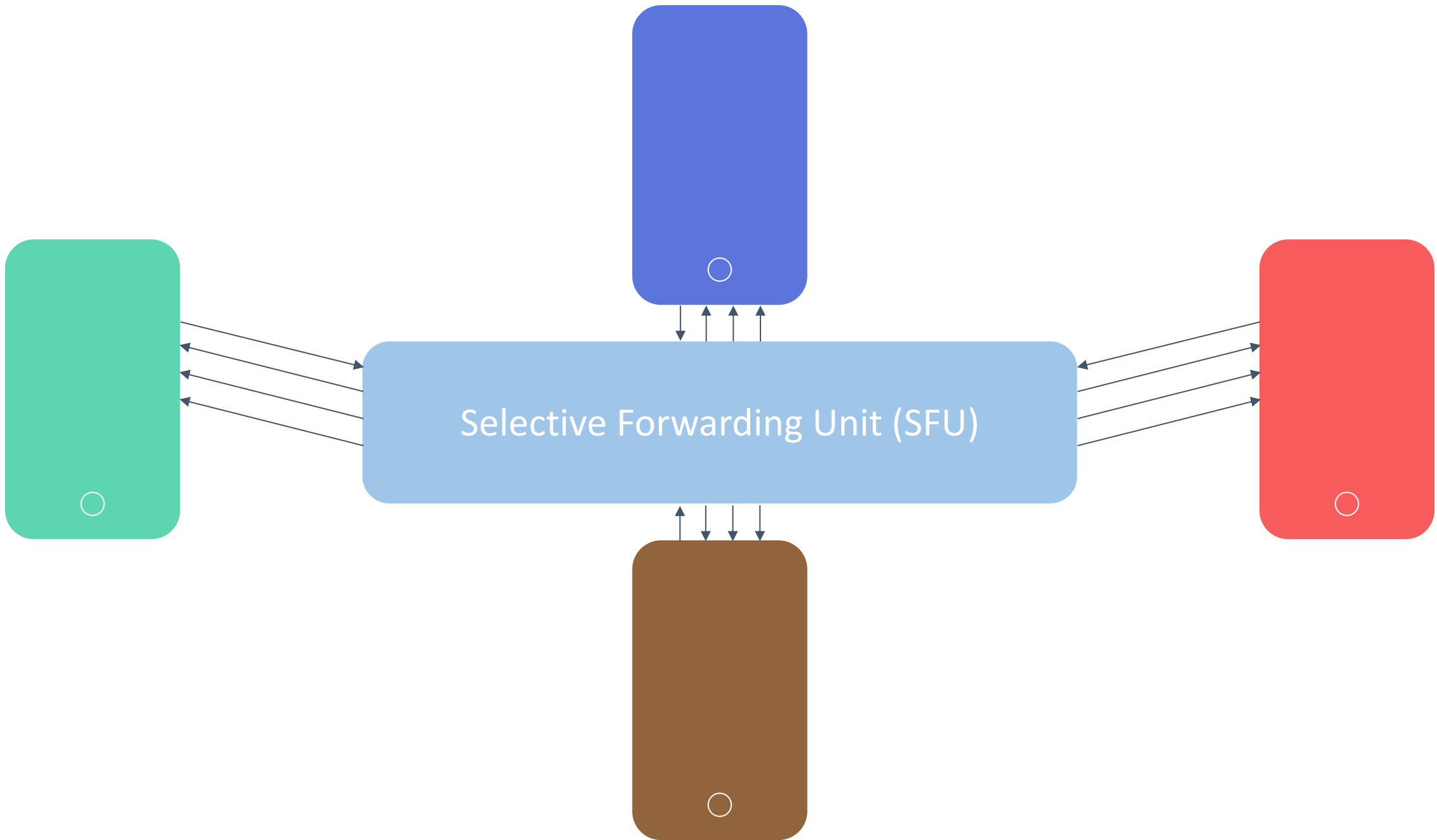
Web RTC

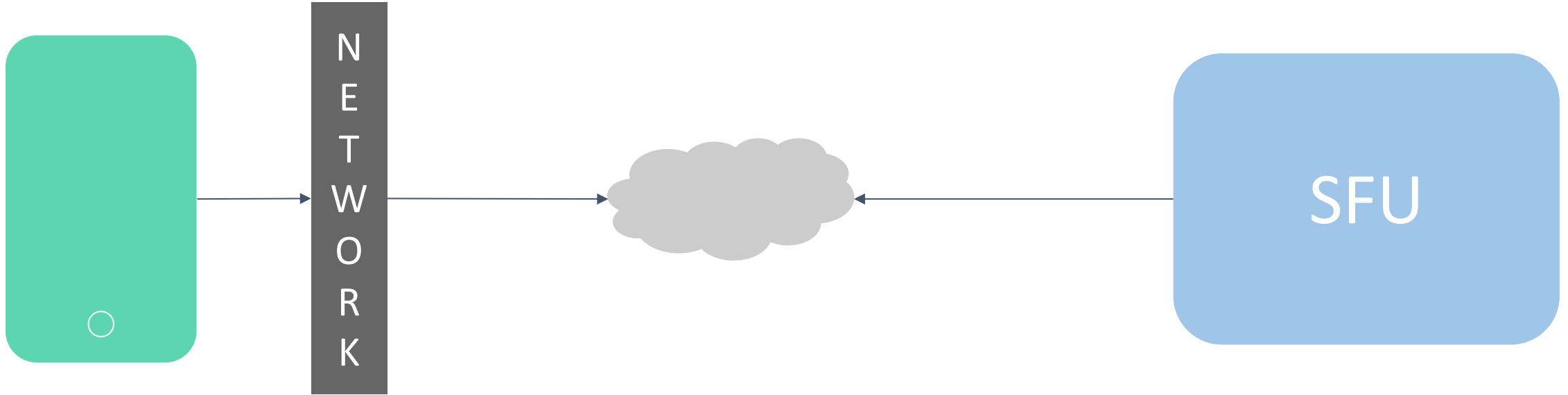


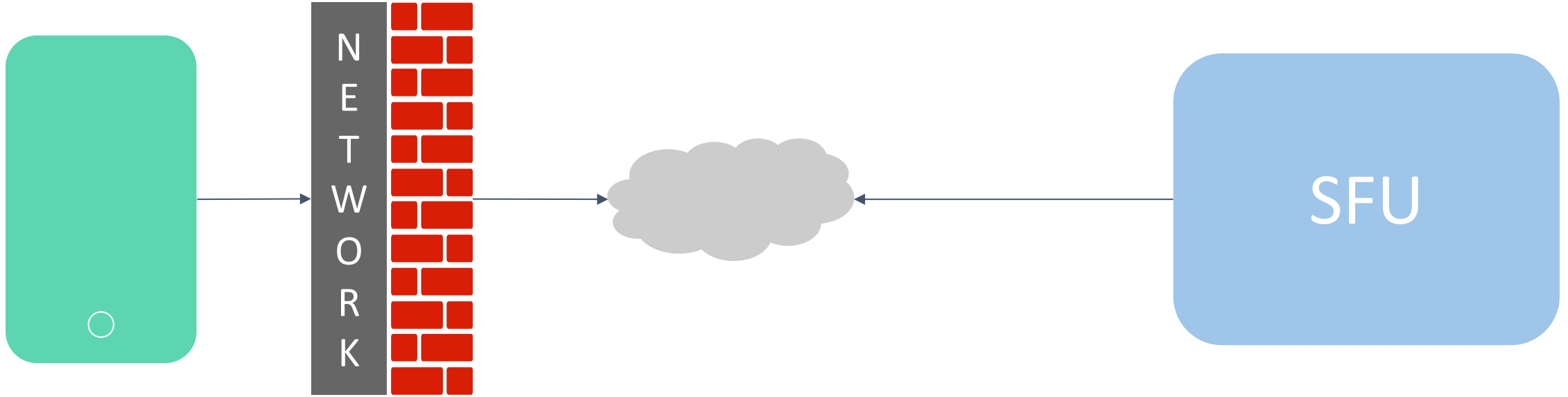
UDP (and recently TCP as well)

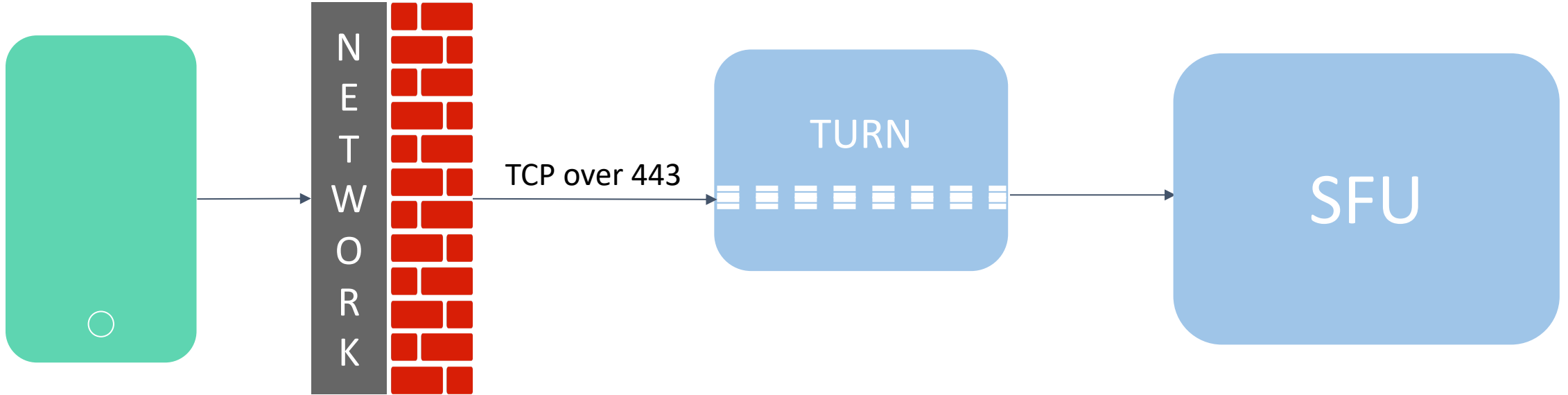


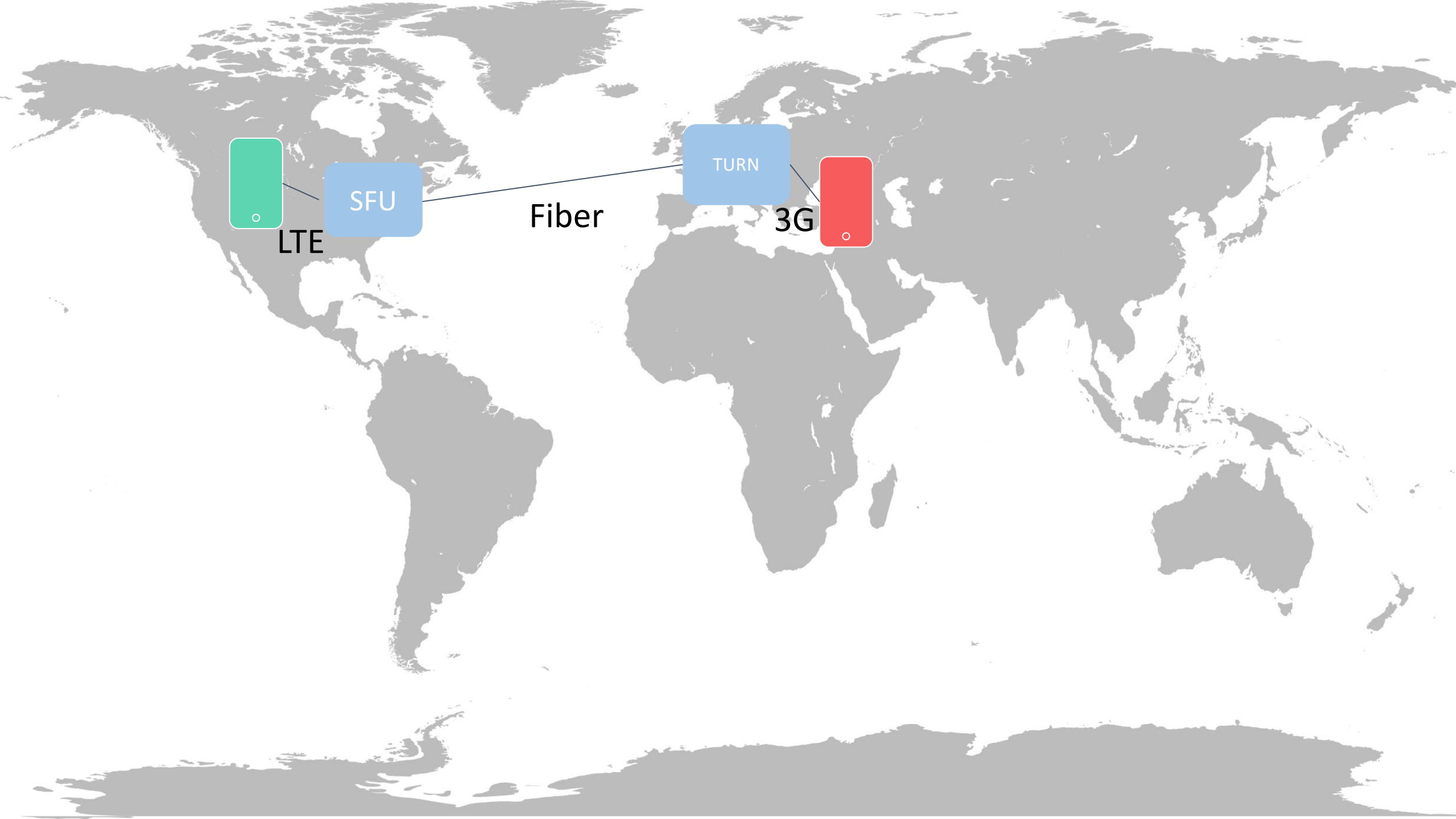












LTE

SFU

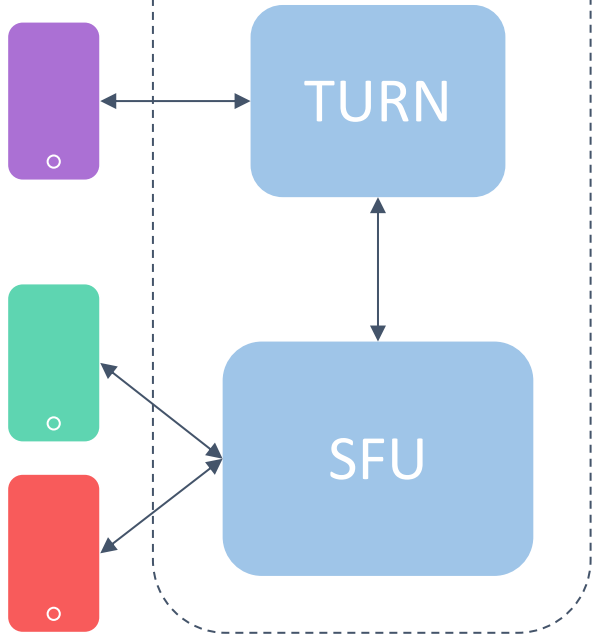
Fiber

TURN

3G



WebRTC



Broadcaster
+
Guests



Viewers

WebRTC



Broadcaster
+
Guests

TURN

SFU

RTP
over
TCP

(Simplified)
Live Video Infra at Twitter

Video Manager Service
(H.264 Pass-through)

Audio Transcode Service
(OPUS → AAC)

C
D
N

HLS
or
LHLS

Viewers

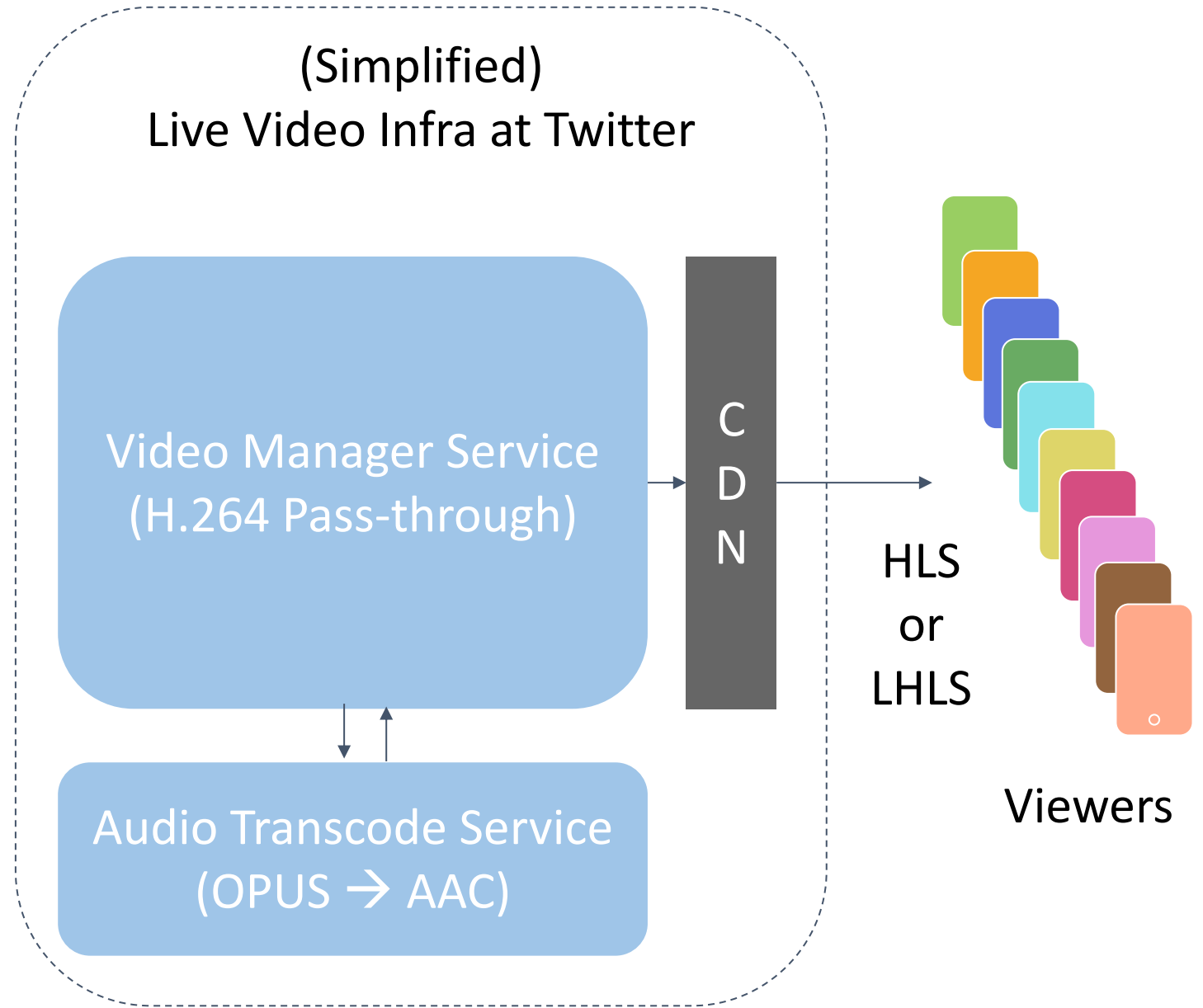


Wednesday

8:30am: Low Latency

**LHLS Media Streaming
at Twitter**

*Mark Kalman, Staff
Engineer, Twitter*



```
#EXTM3U
#EXT-X-TARGETDURATION:2
#EXT-X-VERSION:4
#EXT-X-MEDIA-SEQUENCE:1
#EXTINF:2.0, broadcasterVideo1.ts
#EXTINF:2.0, broadcasterVideo2.ts
#EXTINF:2.0, broadcasterVideo3.ts
#EXTINF:2.0, broadcasterVideo4.ts
#EXTINF:2.0, broadcasterVideo5.ts
```

playlist.m3u8

broadcasterVideo1.ts

```
ID3: guests = [
  {
    username: ...
    profileImage: ...
    audioLevel: ...
  },
  {
    ...
  }
]
```

```
ID3: guests = [
  {
    username: ...
    profileImage: ...
    audioLevel: ...
  },
  {
    ...
  }
]
```

broadcasterVideo2.ts

```
ID3: guests = [
  {
    username: ...
    profileImage: ...
    audioLevel: ...
  },
  {
    ...
  }
]
```

```
ID3: guests = [
  {
    username: ...
    profileImage: ...
    audioLevel: ...
  },
  {
    ...
  }
]
```

Questions?

Can Bal

cbal@twitter.com