



Chris Allen

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Co-founder of Infrared5, developer, musician, mixologist



yeah, we can build that. ■ ■ ■

RED5PRO

LIVE STREAMING FOR ANY SCREEN

Our beta SDK
is now available!

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what we will cover

what's possible with WebRTC

background on streaming media for the web

the details

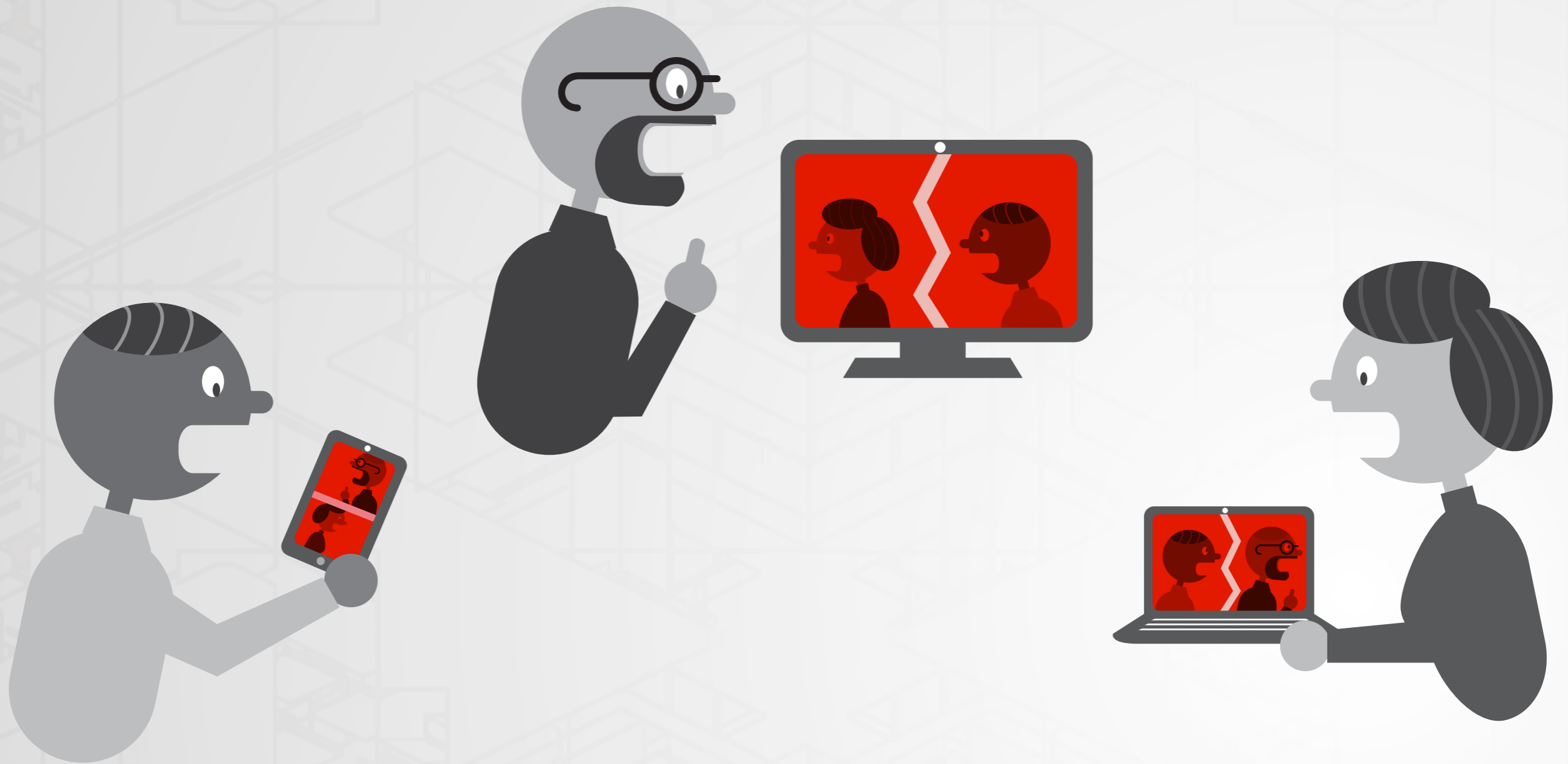
experiences that WebRTC enables

what's next!

what can you do with WebRTC?

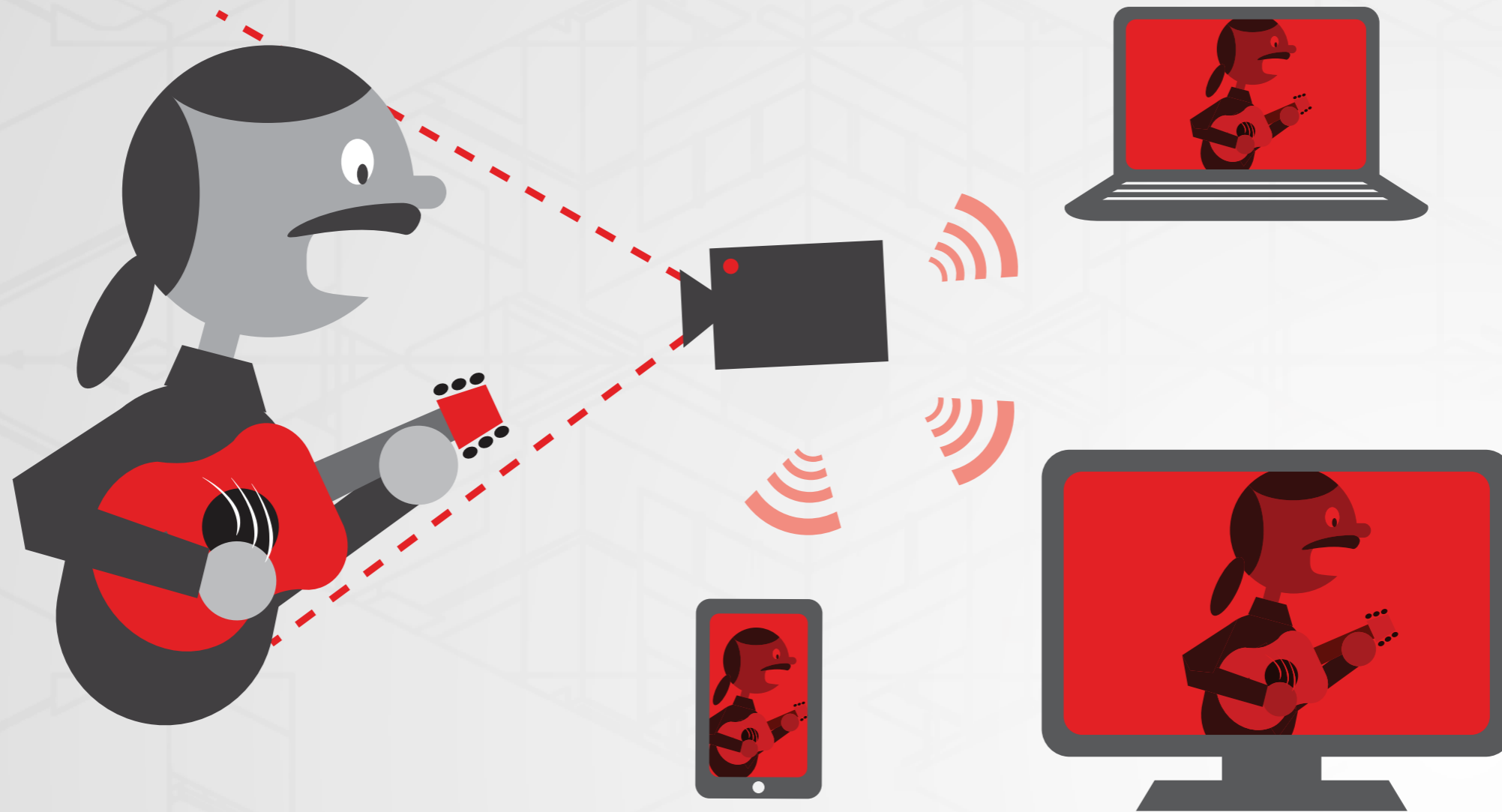
yeah, we can build that. ■ ■ ■

video chat



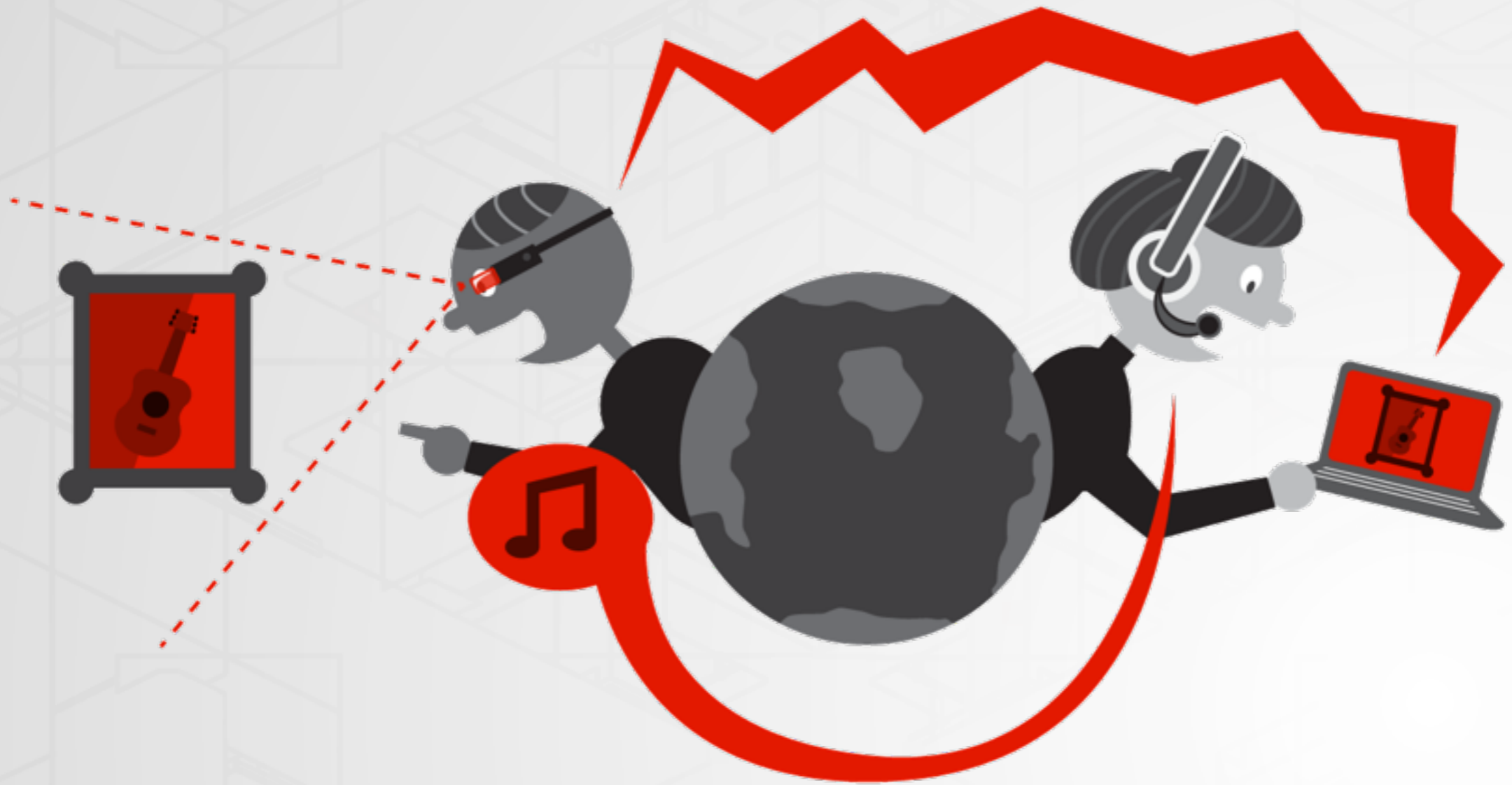
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live broadcasting



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internet of things



yeah, we can build that. ■ ■ ■

a bit of history

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Major General George Owen Squire





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realPlayer



QuickTime



**Windows
Media Player**

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yeah, we can build that. ■ ■ ■



macromedia
FLASH
COMMUNICATION
SERVER **MX**

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In 2005 we reverse engineered the Flash streaming protocol and released an open source server

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Two years later we quit our day jobs and started our company

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At first these guys were weren't too happy!

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but then we built this with adobe

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Museum of Science.



brightcove



Adobe

match.com

**STAR
WARS**

SICK

SCHOLASTIC



SONY

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Today Red5 is used by thousands of companies for all kinds of experiences



SONY MUSIC



WRIGLEY



entertainment • enterprise • educational • events • retail • social media • non-profits

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Web  RTC

realtime communication





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get access to media (camera and mic)



find a peer



negotiate media formats (JSEP)



establish communication channel (ICE)



stream media

media access



```
navigator.getUserMedia(constraints, successCallback,  
errorCallback);
```

next you will need a server.

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why the heck do I need a server?!
isn't this P2P?!

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signaling



http



node 



socket.io

yeah, we can build that. ■ ■ ■

find a peer



custom application code that you write

negotiate media formats



using **j**avascript **s**ession **e**stablishment **p**rotocol
send a **s**ession **d**escription **p**rotocol (SDP)

establish a communication channel



```
addIceCandidate(new  
RTCIceCandidate(message.candidate));
```

STUN



session **t**raversal **u**tilities for **NAT**
allows you to get a device's IP address
that's behind a firewall

TURN



traversal **u**sing **r**elays around **N**AT proxies the stream through a server for when p2p fails due to a firewall



interactive **c**onnectivity **e**stablishment
is WebRTC's framework for negotiating firewalls

stream media



now you finally get your p2p streaming connection

recording and transcoding



a server helps if you want to record the experience
or combine the streams into one

a quick review



get access to media (camera and mic)



find a peer



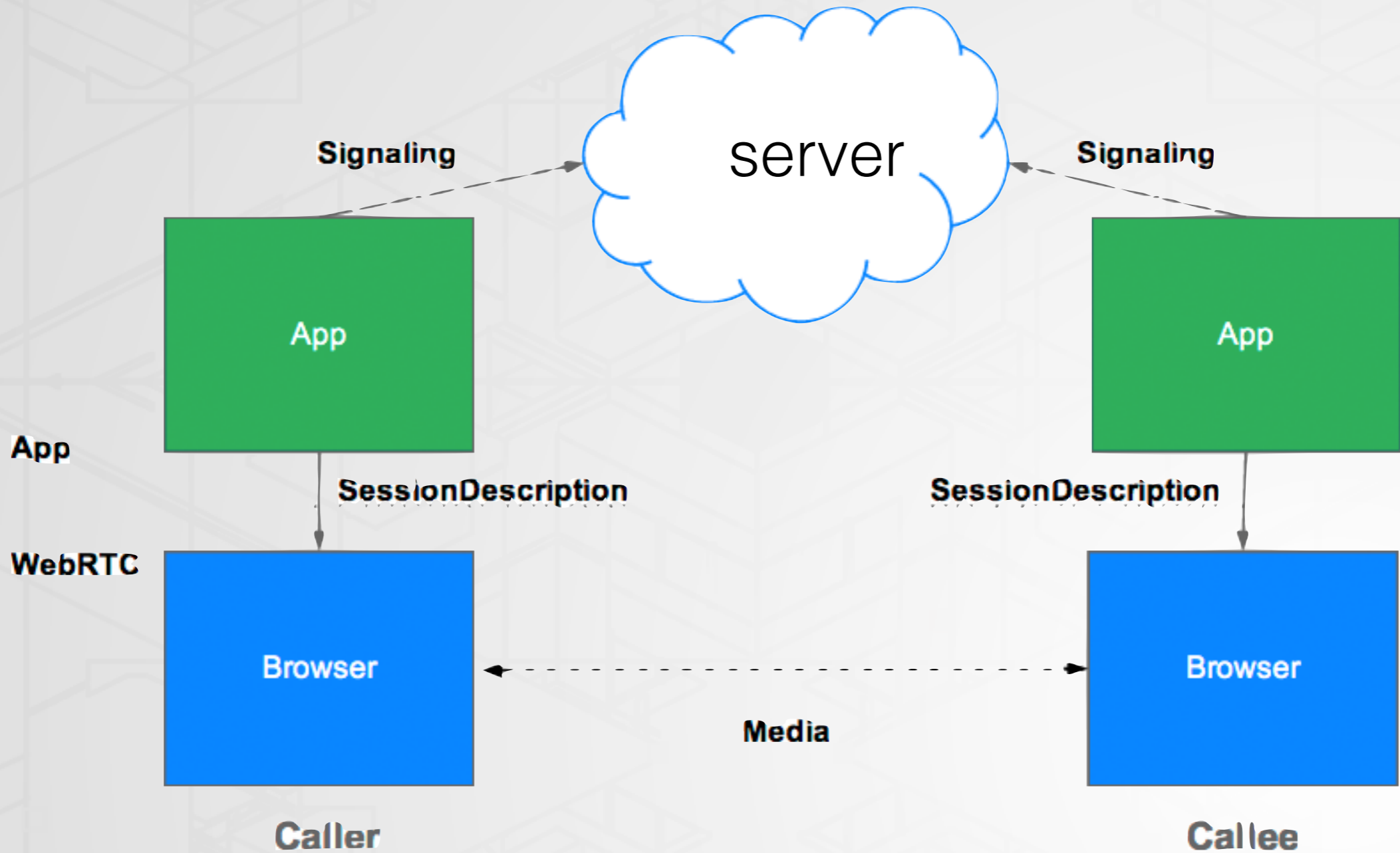
negotiate media formats (JSEP)



establish communication channel (ICE)



stream media



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let's see some code

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services



libraries



what a pain!
is there any way this can be easier?



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what does WebRTC make possible?

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Be My Eyes

Lend your eyes to the blind



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SelfieCam™



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Your browser is the *console*, your phone is the *controller*.



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Download Android
Free on Google Play!

Download and start up the Brass Monkey application now. Make sure you device is on the same WiFi connection as your computer or smart tv.

I need help setting up my wifi

Re-checking for smart-devices in.. 3



brass monkey®

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RED5 PRO

robust server

Fast - build realtime data, audio and video streaming applications

Connectable - pair devices across the internet and locally

Extensible - tap into other libraries via Java based application framework

Scalable - connect to other servers for large deployments

client-side SDKs

Easy - SDK that abstracts the complex networking and rendering for you

Creative - instant second screen connectivity for access to motion sensors and touch

Flexible - freedom to extend, modify and customize experiences for your app

Unified - consistent cross platform API for each platform

iOS • Android • HTML5 • Unity • C

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android example

```
public void start() {  
    camera.stopPreview();  
  
    stream = new R5Stream(new R5Connection(configuration));  
    stream.setView((SurfaceView) getActivity().findViewById(R.id.surfaceView));  
  
    R5Camera r5Camera = new R5Camera(camera, 320, 240);  
    R5Microphone r5Microphone = new R5Microphone();  
  
    stream.attachCamera(r5Camera);  
    stream.attachMic(r5Microphone);  
    stream.publish("red5prostream");  
}
```

javascript example

```
var video = document.querySelector('video');

function start() {

    var stream = new R5Stream(new R5Connection(configuration));
    video.src = window.URL.createObjectURL(stream);

    var r5Camera = new R5Camera(camera, 320, 240);
    var r5Microphone = new R5Microphone();

    stream.attachCamera(r5Camera);
    stream.attachMic(r5Microphone);
    stream.publish("red5prostream");
}
```



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get early beta access
sign up at red5pro.com

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