

SocketStream

A new framework for a new web

QCon SF - November 2012 - Owen Barnes

About me



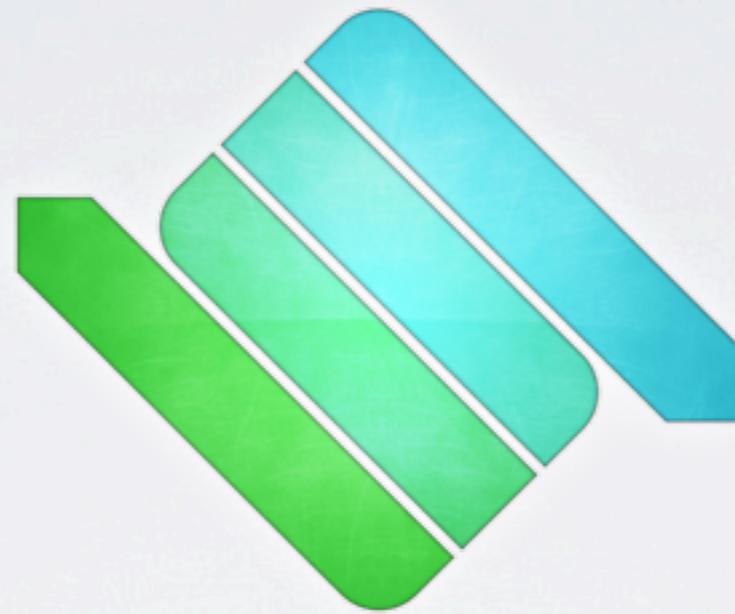
Full stack web developer
Used RoR commercially for 5 years



Worked at AOL for 4 years
(online advertising division)



Helping companies get the most
of the the real time web and Node.js



SocketStream

www.socketstream.org



Is it possible to make a web app where all the data flowed over the websocket?

2 years later...

The next phase of the web is Realtime



1. Static

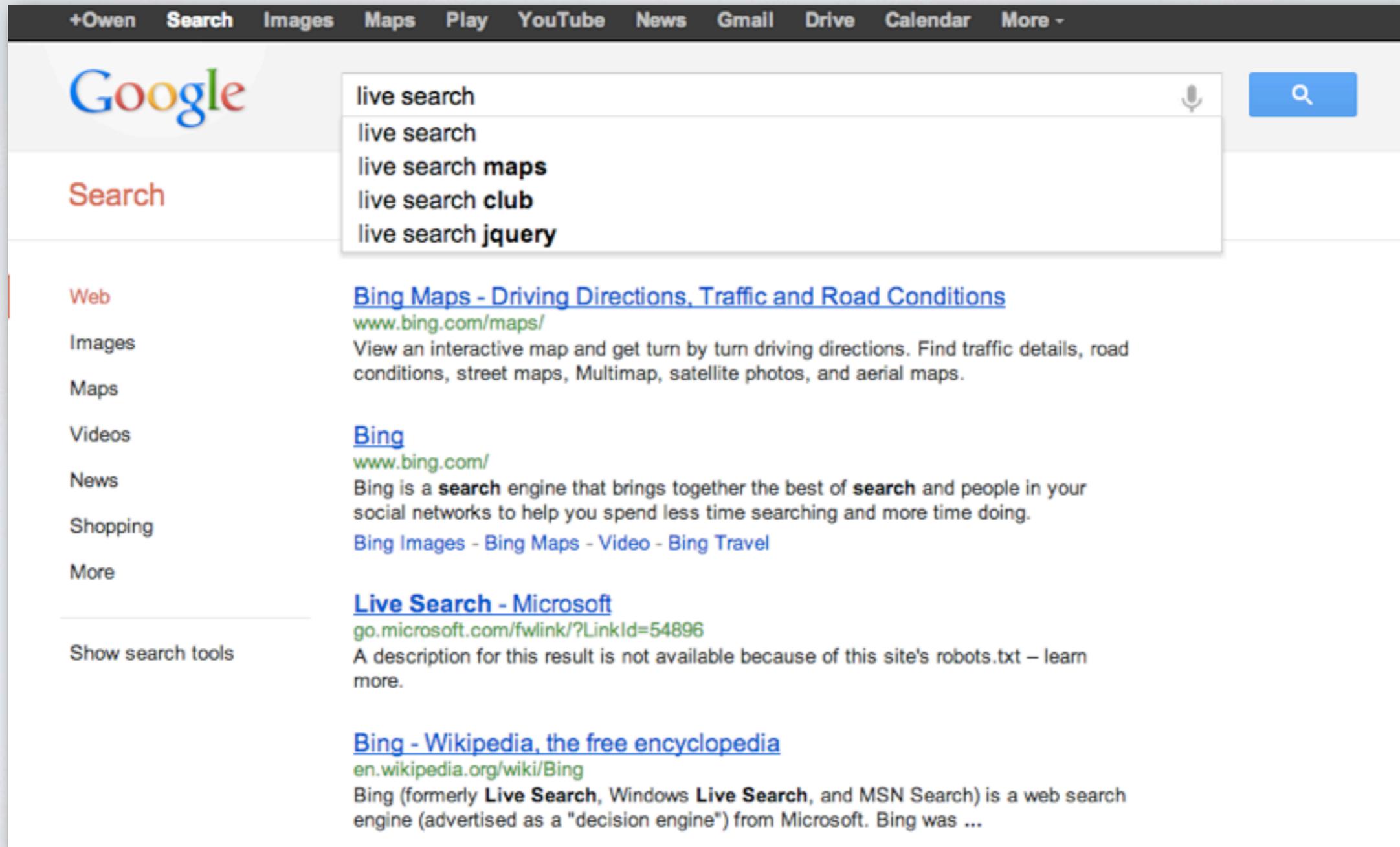


2. Dynamic



3. Realtime

Expectations change over time



The image shows a screenshot of a Google search page. At the top, there is a navigation bar with links for '+Owen', 'Search', 'Images', 'Maps', 'Play', 'YouTube', 'News', 'Gmail', 'Drive', 'Calendar', and 'More -'. The Google logo is on the left, and a search bar is on the right with a blue search button. The search bar contains the text 'live search' and has a dropdown menu showing suggestions: 'live search', 'live search maps', 'live search club', and 'live search jquery'. Below the search bar, there is a sidebar on the left with links for 'Web', 'Images', 'Maps', 'Videos', 'News', 'Shopping', and 'More'. The main content area shows search results for 'live search'. The first result is 'Bing Maps - Driving Directions, Traffic and Road Conditions' with the URL 'www.bing.com/maps/'. The second result is 'Bing' with the URL 'www.bing.com/'. The third result is 'Live Search - Microsoft' with the URL 'go.microsoft.com/fwlink/?LinkId=54896'. The fourth result is 'Bing - Wikipedia, the free encyclopedia' with the URL 'en.wikipedia.org/wiki/Bing'.

+Owen Search Images Maps Play YouTube News Gmail Drive Calendar More -

Google

Search

live search

live search

live search maps

live search club

live search jquery

Web

Images

Maps

Videos

News

Shopping

More

Show search tools

[Bing Maps - Driving Directions, Traffic and Road Conditions](#)
www.bing.com/maps/
View an interactive map and get turn by turn driving directions. Find traffic details, road conditions, street maps, Multimap, satellite photos, and aerial maps.

[Bing](#)
www.bing.com/
Bing is a **search** engine that brings together the best of **search** and people in your social networks to help you spend less time searching and more time doing.
[Bing Images](#) - [Bing Maps](#) - [Video](#) - [Bing Travel](#)

[Live Search - Microsoft](#)
go.microsoft.com/fwlink/?LinkId=54896
A description for this result is not available because of this site's robots.txt – learn more.

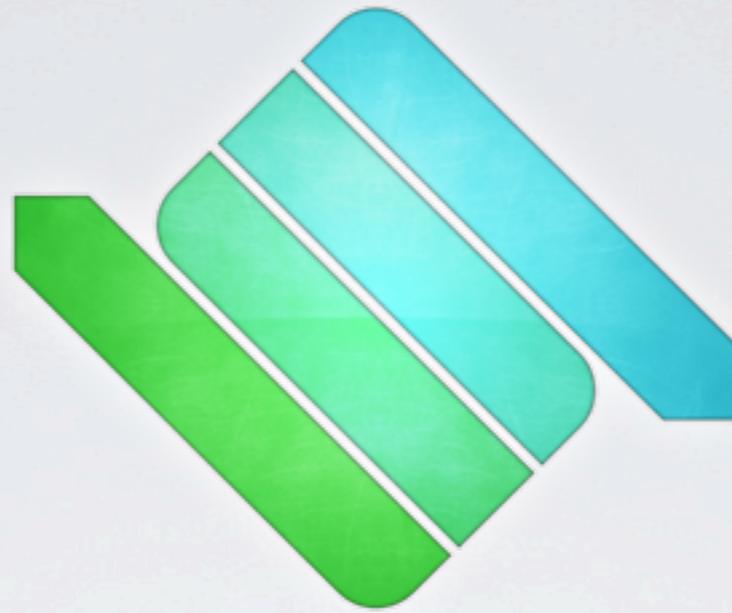
[Bing - Wikipedia, the free encyclopedia](#)
en.wikipedia.org/wiki/Bing
Bing (formerly **Live Search**, Windows **Live Search**, and MSN Search) is a web search engine (advertised as a "decision engine") from Microsoft. Bing was ...

Expectations change over time



Mobile apps rarely need refreshing

Nor should web apps



SocketStream

a **node**  **web framework**

1. Dedicated to building single-page apps
2. All application data flows over the websocket

Why bother with a framework?



Rails became so popular because it eliminated pointless decisions and gave developers to freedom to create

Out of the box Node gives you:

```
var http = require('http');

http.createServer(function (req, res) {
  res.writeHead(200, {'Content-Type': 'text/plain'});
  res.end('Hello World\n');
}).listen(1337, '127.0.0.1');

console.log('Server running at http://127.0.0.1:1337/');
```

a **request** and **response** object

Essentials for all realtime apps

Code Organization

Code Pre-processors

HTTP/Auth Integration

Connection Handling

Sessions

CDN Support

Asset Packing

Client-side Templates

Live CSS/HTML Reload

Testing

PushState Routing

Mobile Clients

0.3

Features

Optional modules for all tastes



Stylus

Jade

and many more...

Modular Transport Layer



SockJS

Engine.IO

Change websocket transport without changing your app

Full Node.js Compatibility



Embraces Node.js, doesn't try to abstract it away

Use it alongside Express, EveryAuth, Mongoose and more

Uses Connect Session Store - share sessions with Express

Start your app with `node app.js` NOT `socketstream start`

Define Multiple Single-page Clients



Serve custom views, CSS and JS code to different devices without duplicating files

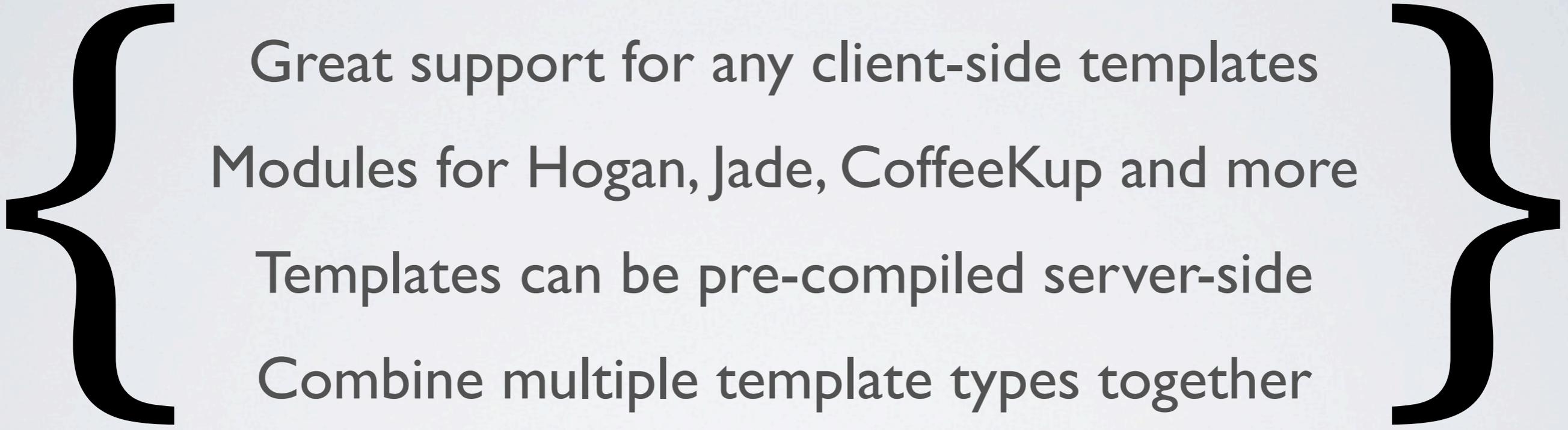
Client Framework Agnostic



Ember.js



Client-side Templates



Great support for any client-side templates
Modules for Hogan, Jade, CoffeeKup and more
Templates can be pre-compiled server-side
Combine multiple template types together

Client-side Modules



Use 'require' in the browser

Share code between client/server

Modules work like they do in Node.js

Use Node.js system libs in the browser

The best way to organise large projects

Designed for modern apps

HTML



Easily use Webworkers

Support for Push State routing

Where are we today?

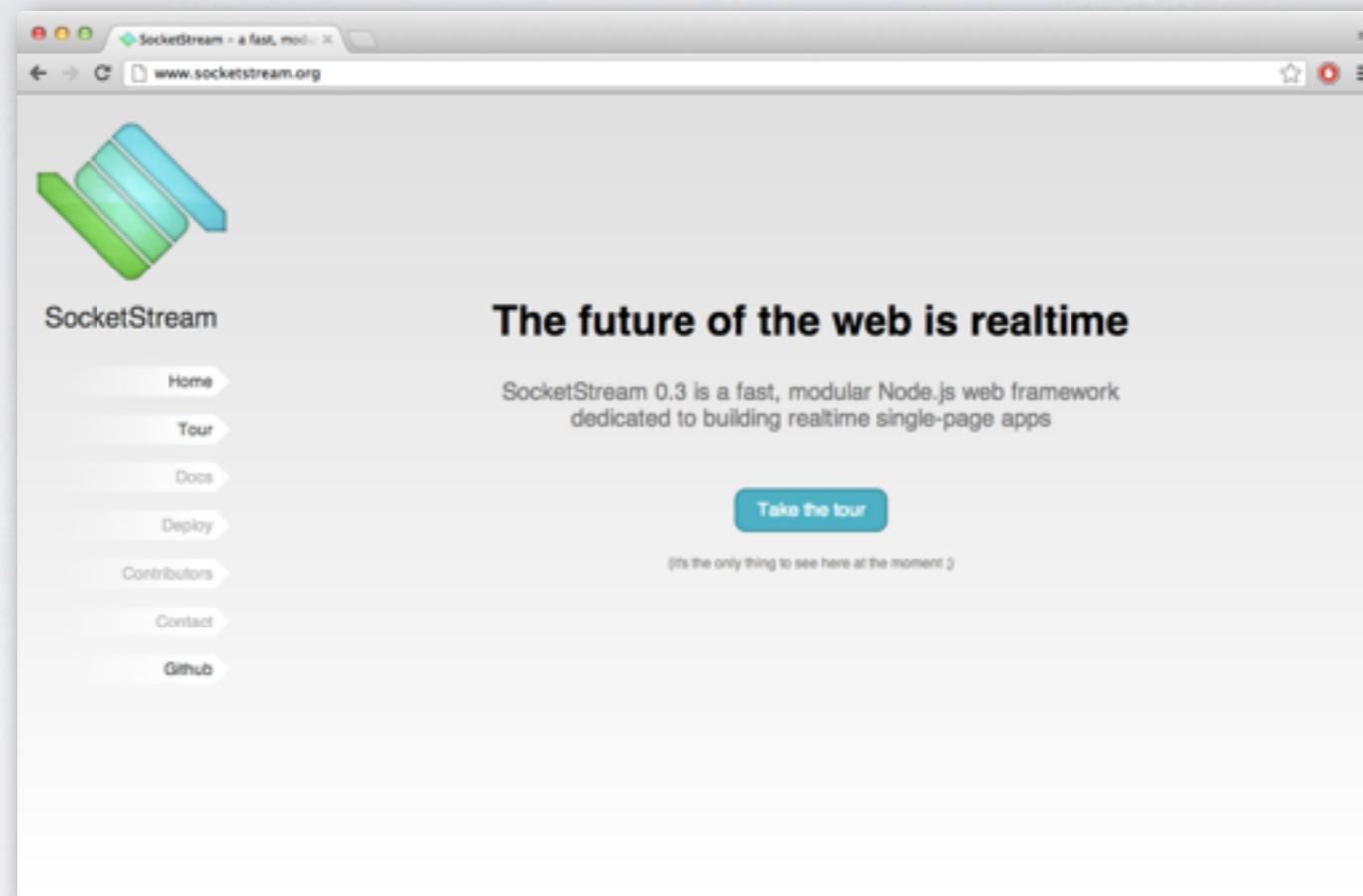
Progress so far

- ✓ Stable 0.3 version with production users
- ✓ Over 2200 Github watchers
- ✓ Active Google Groups / IRC community
- ✓ Feature complete (core)
- Documentation / Website
- Demo Apps
- ✗ Screencasts

0.3

Demos

0.3 available today!



<https://github.com/socketstream/socketstream>



0.4

Preview

(In active development - subject to change)

Goals

- ✓ High performance
- ✓ Minimal bandwidth
- ✓ Reliability at scale
- ✓ Easy to get started
- ✓ Transport agnostic
- ✓ Minimal client-side code
- ✓ Excellent mobile compatibility

Full
control
of your
stack

‘Roll Your Own’

Socket.IO

SocketStream

Derby

Meteor

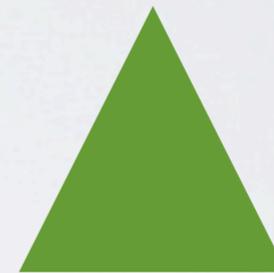


Instant productivity

Major trend



Large frameworks



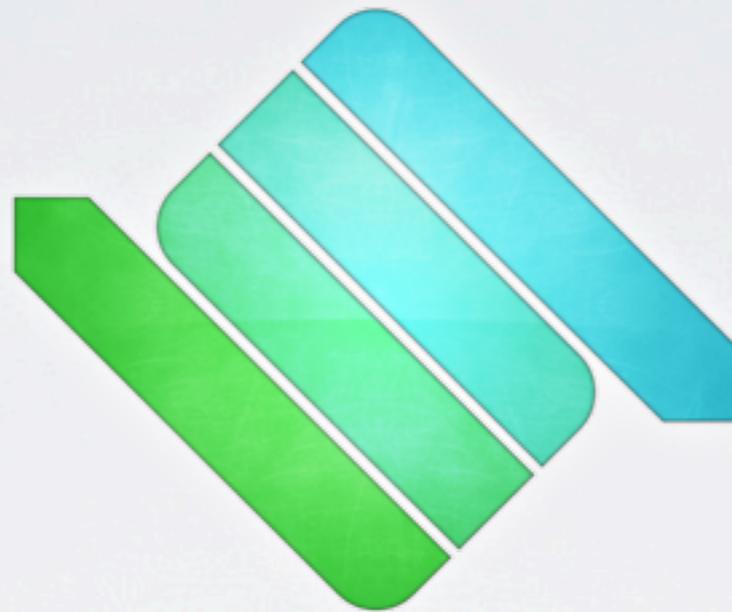
Small modules

In a ideal world



SocketStream would be a **community** of developers dedicated to making realtime apps by combining existing modules

but until then



We write minimal software
to integrate the best modules
& obey standard Node conventions

Node Streams to the rescue!



You Tube™ search for “LXJS streams”

Benefits of Streams

1. Transmit data incrementally

2. A standard API

(blessed by the brightest minds
in the Node community)

<https://github.com/substack/stream-handbook>

Also new in 0.4

- ✓ Re-written everything in vanilla JS
- ✓ Bundled with Engine.io by default
- ✓ Improved Request Responder API
- ✓ Much better logging (silent by default)
- ✓ Improved asset packing, with GZip support
- ✓ Improved architecture and design

So what will we NOT do?

Not designed for SEO

SocketStream apps typically:

- require a login to pass the first page
- contain very little indexable content
- are more like iPad apps than websites



The priority is a clean, efficient system for building modern realtime apps



How best to integrate
models into `SocketStream`



`/app/models`

DON'T DO IT!

Models are tricky to get right...

 BACKBONE.JS

Ember.js

 ANGULARJS
by Google

WEBSOCKET
TRANSPORT

 mongoDB

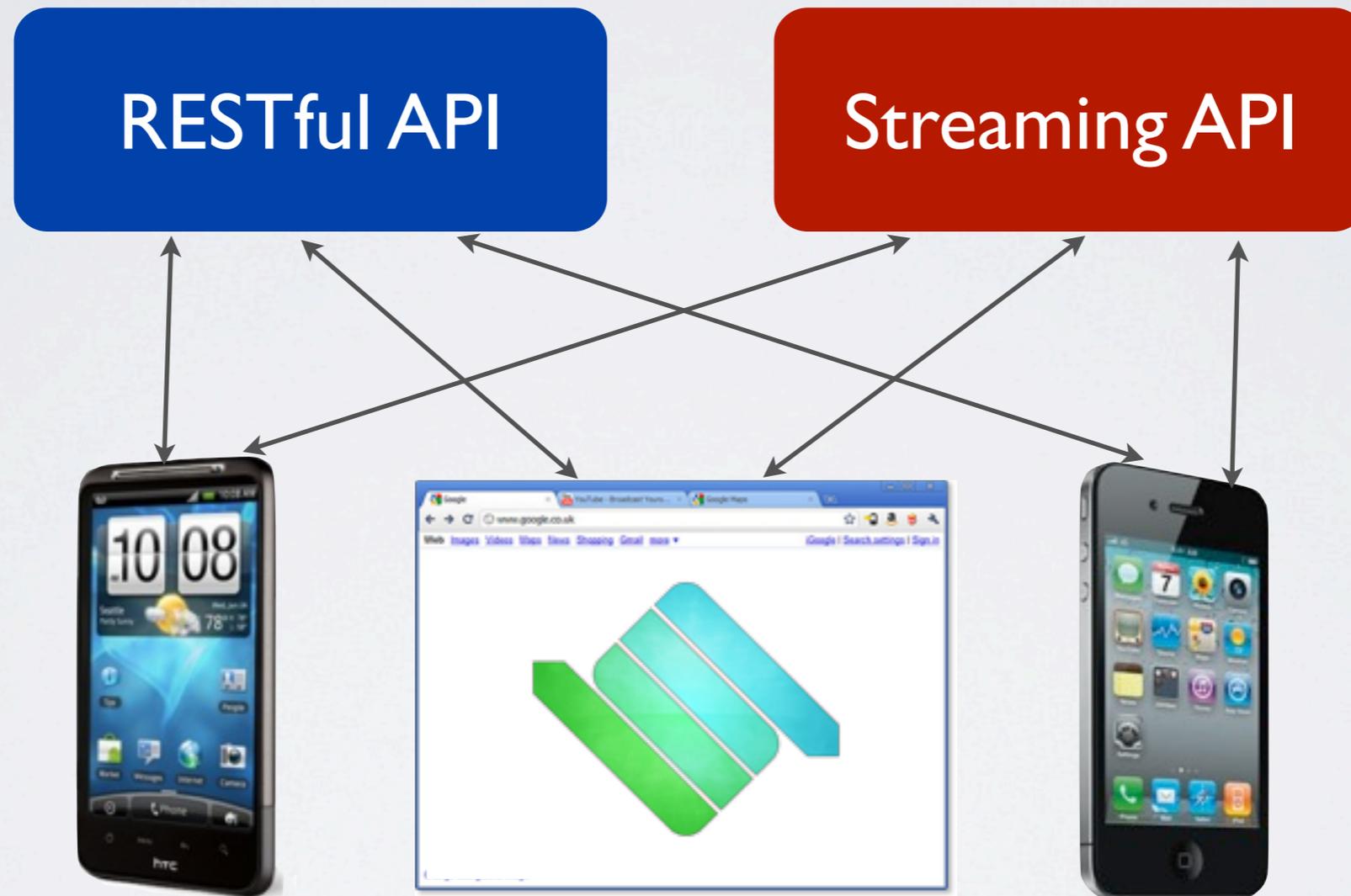
 MySQL

 redis

n client-side
frameworks

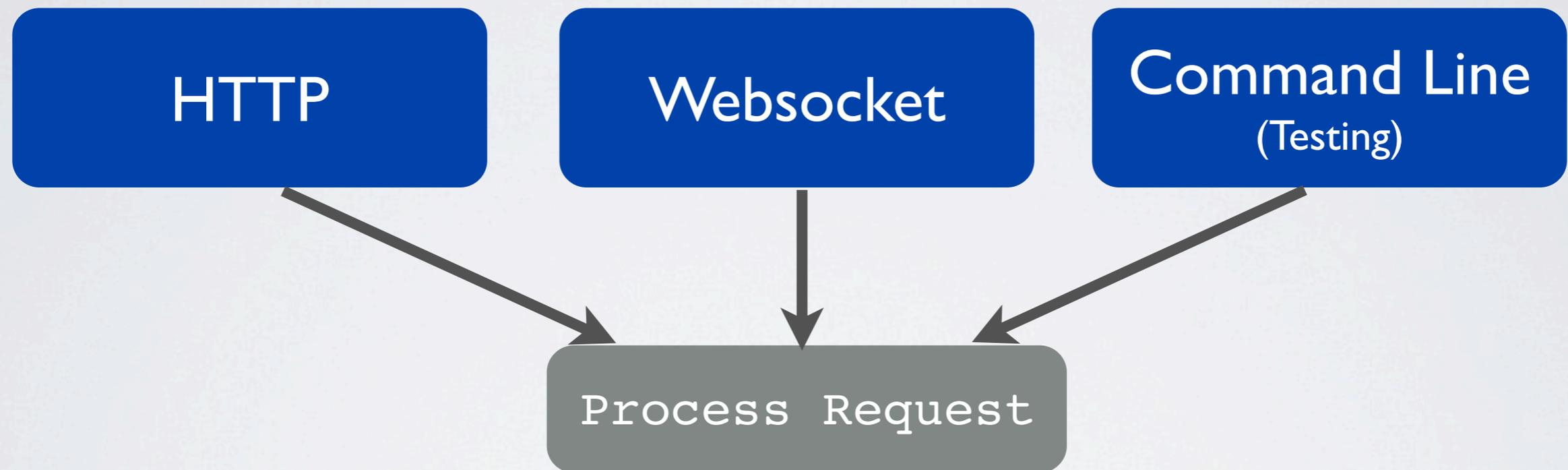
n persistent
stores

...and they're not always needed



Introducing Streamable Services

An API to handle messages and deliver code



One module. Multiple interfaces.

Services Overview

Three responders bundled: **pubsub, rpc, liveReload**

Direct access to the websocket

Provide custom client/server code

Automatically multiplexed over the WebSocket

Allow different ideas around models to thrive

Perfect for high-speed gaming, presence and more

ss-angular and **ss-backbone** already available!

0.4

Demo

Play with the code yourself

github.com/socketstream/socketstream-0.4

**We have the audience,
the interest, and the community**

If you're interested in building
realtime apps at scale, get in touch

owen@socketstream.org

And finally...



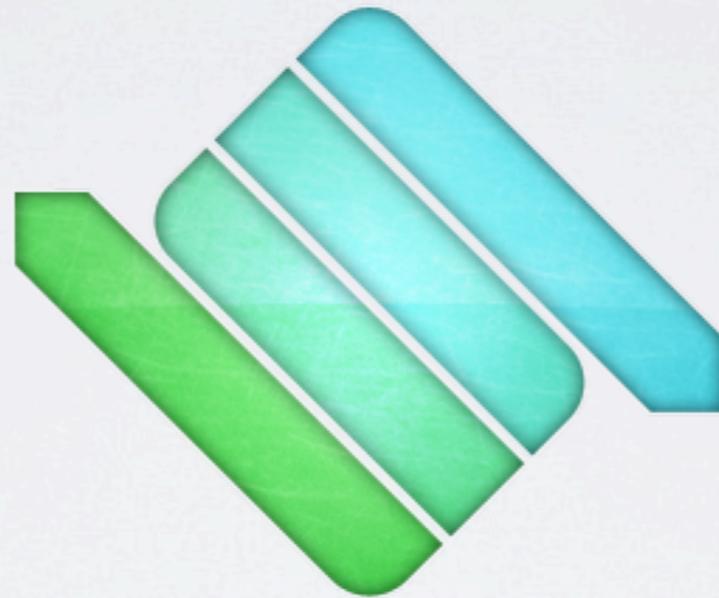
Big thanks to Guillermo Rauch (Socket.IO), TJ Holowaychuk (Stylus, Jade), Substack (Browserify), Mihai Bazon (UglifyJS), Isaac Schlueter (NPM), Salvatore Sanfilippo (Redis) and Ryan Dahl (creator of Node.js)

Q&A

@socketstream

@temporalwave

Thank you!



@socketstream

@temporalwave