



**Edinburgh 2017**

# **Build Apps for your Enterprise**

with SAS and HTML5

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# Who I am

I am Nik. I run Boemska. We are a SAS Partner consultancy. We don't work much with Pharma but we know SAS and build a lot of Apps for our clients. Anything from legacy SAS/AF application modernisations, to Mobile apps, to some pretty big bespoke systems. All on SAS.

I'm a nerd and I get carried away quite easily. I'm trying to keep this as brief as I can on purpose.

# What I will do

First I'll show you some apps

Then I'll go through how they work

Then I'll briefly touch on architecture  
(sizing, scaling, impact)

Then I'll talk about why  
I think this is really important

...then questions



# What I will talk about

What HTML5 Apps are

How we build them using SAS

Why we build them using SAS

*Questions*



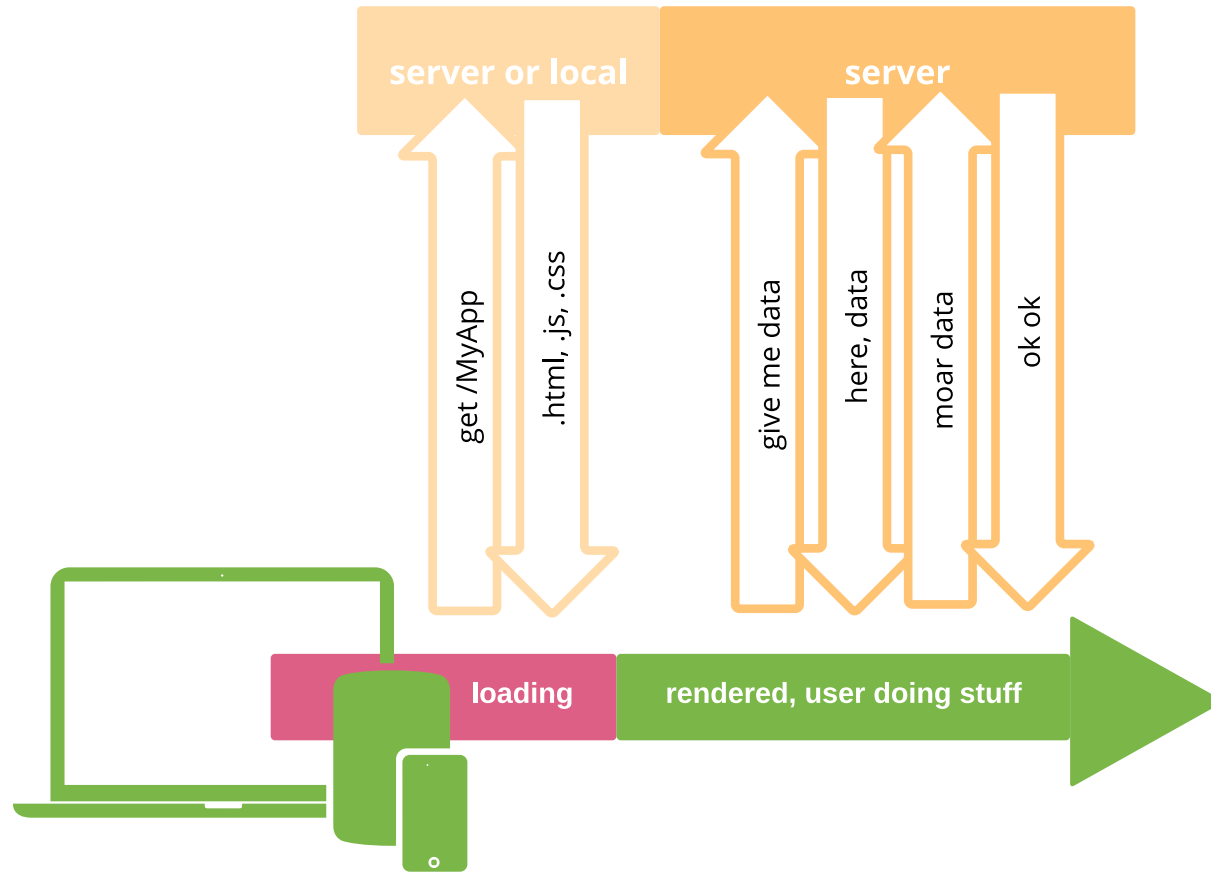
# What is a HTML5 App

An App that loads and runs in the browser

*and*

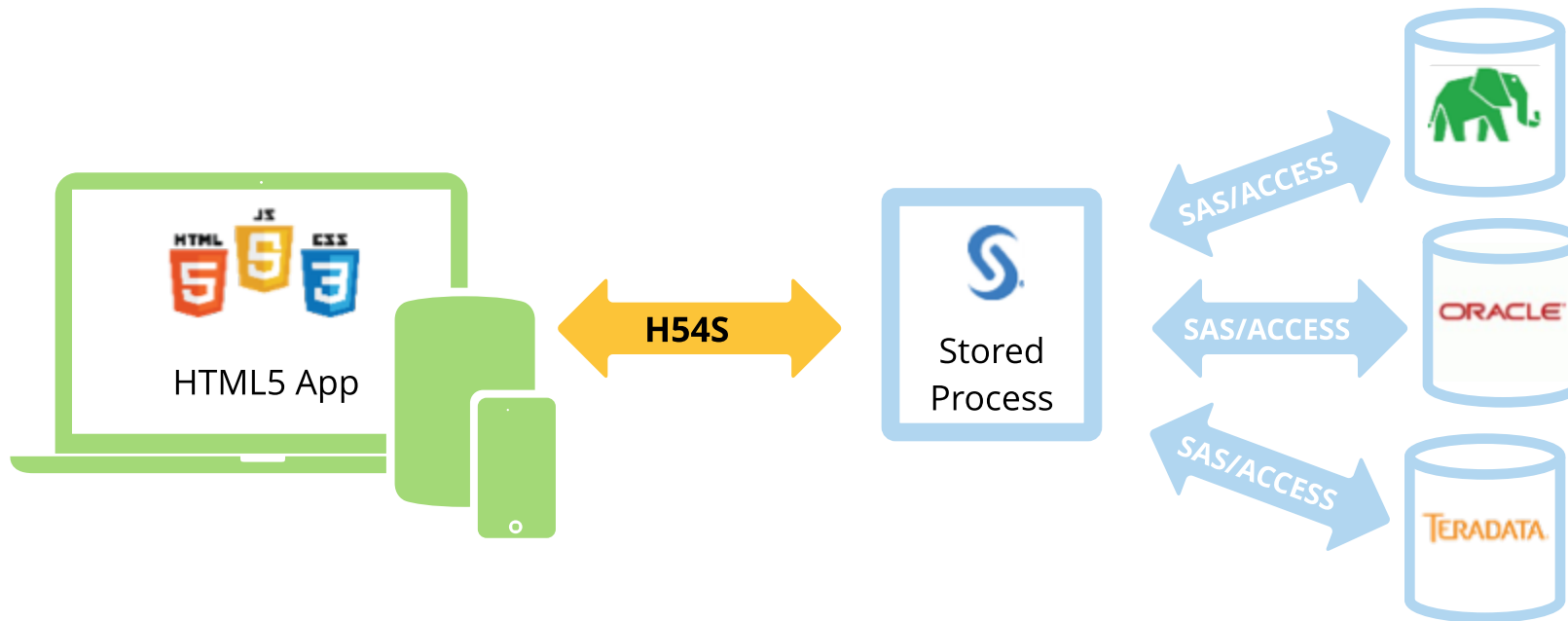
Any 'native-ish' App that uses those same  
browser technologies  
(most apps today)

# How a HTML5 App works





# How a SAS-powered HTML5 App works





# What is H54S

Boemska HTML5 Data Adapter for SAS

A terribly named open-source library that  
**lets HTML5 developers & SAS developers  
easily work together to develop  
HTML5-based Enterprise Apps**

<https://github.com/boemska/h54s>



# How a HTML5 SAS App works





# How a HTML5 SAS App works



```
var adapter = new h54s({hostUrl: 'myServer:8080/'});

var myFirstTable = [
  { name: 'Allan', sex: 'M', weight: 101.1 },
  { name: 'Abdul', sex: 'M', weight: 133.7 }
];

var tables = new h54s.Tables(myFirstTable, 'datain');

adapter.call('/Apps/myFirstService',
  tables, function(err, res) {
    if(err) {
      console.log(err);
    } else {
      console.log(res.rtrnd);
    }
  }
});
```

```
%include '/pub/sasautos/h54s.sas';

%hfsGetDataset(datain,work.additions);

data back;
  set sashelp.class
    (obs=3 keep=name sex weight)
    work.additions;
run;

proc sort data=mydata; by name; run;

%hfsHeader;
  %hfsOutDataset(rtrnd, work, back);
%hfsFooter;
```



# H54S Features & Examples

- Bidirectional Data Transport  
uses *datasets* as primary atomic format  
(superseding *parameters*)
- Clientside logging & system messaging facility  
(making apps far easier to support)

<https://apps.boemskats.com/ht/editor/>



# H54S Features & Examples

- SAS Log handling



# H54S Features & Examples

- Handling of clientside sessions & SASLogon Redirects
- Beautiful integration with APIs & Open Source (AngularJS, PostgreSQL, PostGIS, Google Maps)



# H54S Features & Examples

- Role Based Access dictated by Metadata Permissions



# Architecture Benefits

(Enterprise Integration)

- Out-Of-Box Single Sign-On
- Pre-configured Transport Level Security
- Per-request Authorisation
- Granular, role based Metadata security

(happy to talk about this for hours)



# Deployment & BAU Benefits

- Easy deployment into SAS 9.4:  
Web/WebServer/**htdocs** & a SAS **.spk**
- All user & role management is controlled by Metadata & governed by existing SAS Management Console admins
- Completely independent of IT or infrastructure
- Easily maintained by hugely available commodity skillsets



# Alternatives

- IT owned & not Business User Friendly  
(.NET, Java & co)

*or*

- Lacking a competent Integration Layer  
(Mendix, Appian & the new breed)

*or*

- Proprietary (some outright Bad)  
(yes I mean UI5)





# The Bigger Picture

in your current Enterprise

**RAPID** development, because of  
**literally zero** up front startup cost.

Fully HTML5 Standard compliant.  
No compromises made, no proprietary components.

Apps are just another form of Data Management,  
developed and owned by the Business.

# The Future Picture

*is far closer than you think*

**Apps that feature:**

- **Image Recognition**
- **Machine Learning**
- **Elastic Scaling**

...  
**(!!!)**



# What I talked about

What HTML5 Apps are

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***Questions***



# What we're doing to help

*AngularJS Seed App*

[github.com/boemska/h54s-angular-seed-app](https://github.com/boemska/h54s-angular-seed-app)

*SASHOT Table Editor*

[github.com/boemska/sas-hot-editor](https://github.com/boemska/sas-hot-editor)

*OpenUI5 Seed App if you like pain*

[github.com/boemska/h54s-openui5-seed-app](https://github.com/boemska/h54s-openui5-seed-app)

**HTML5 Data Adapter**

[github.com/boemska/h54s](https://github.com/boemska/h54s)

<https://github.com/boemska>