

Angular 2 Universal

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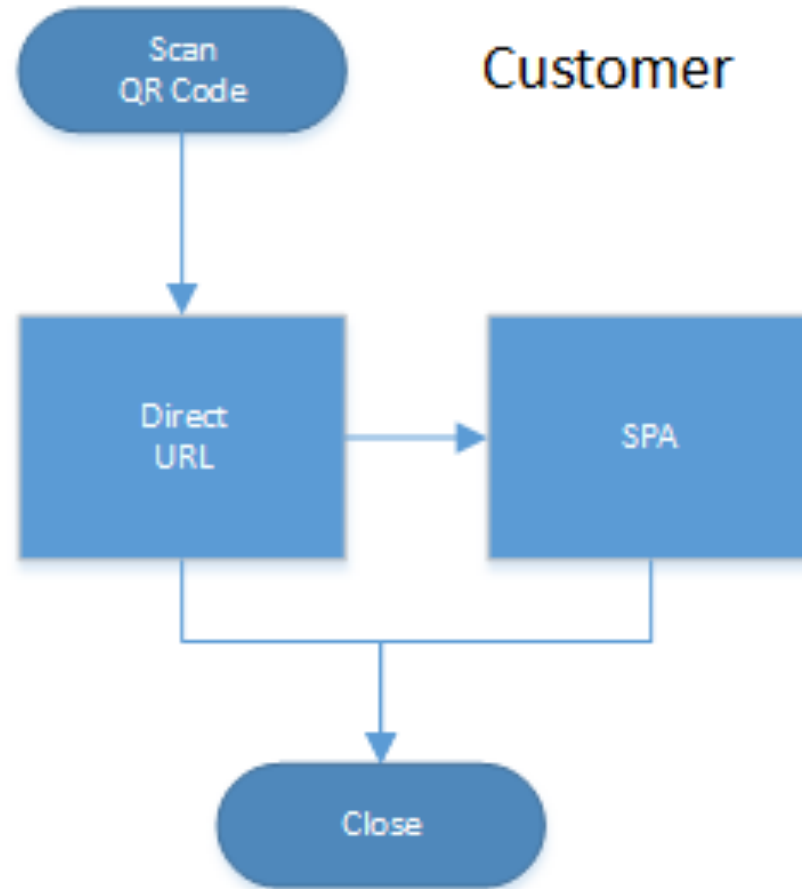
Presentation

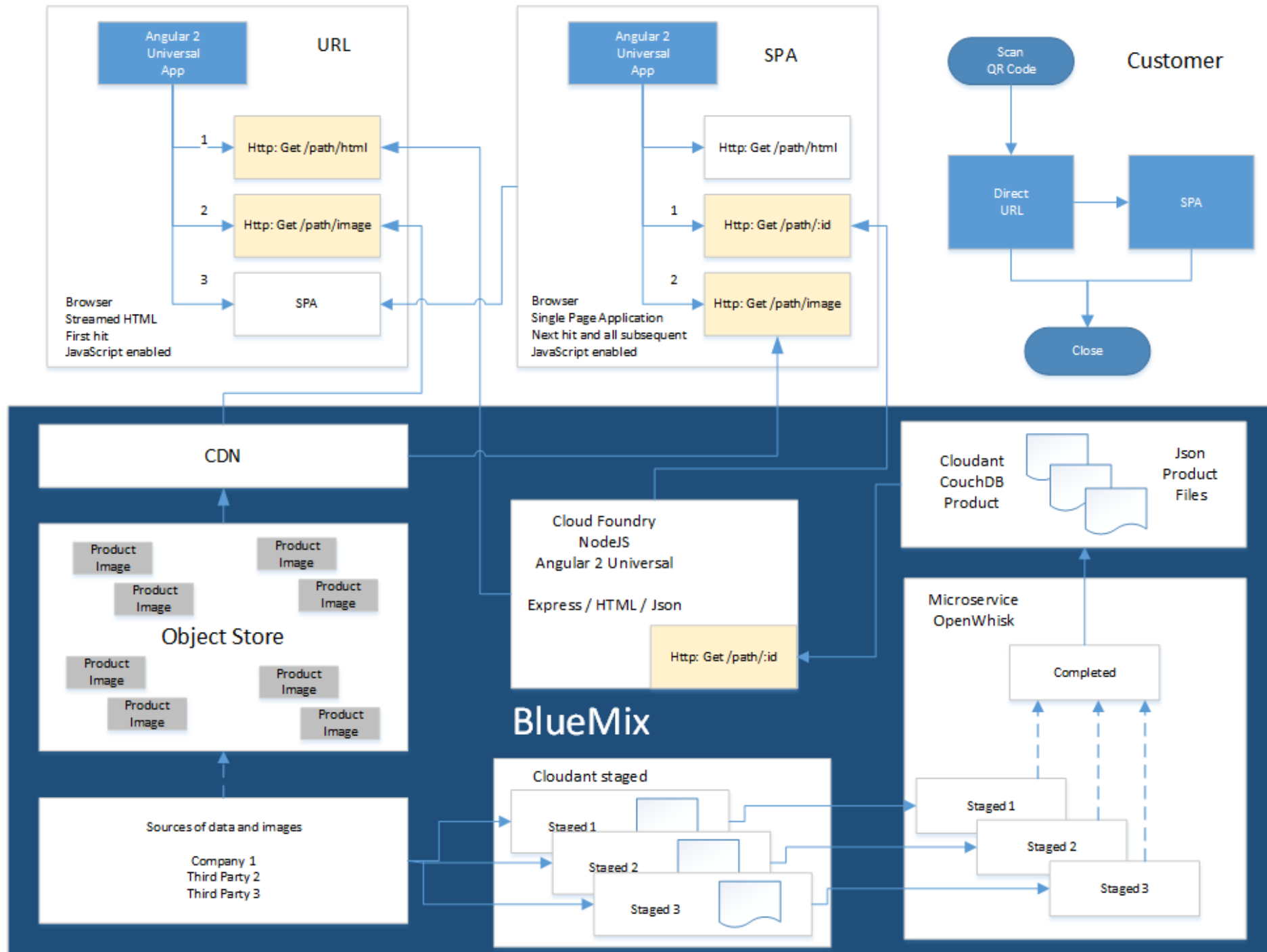
- App requirement
- App flow
- App architecture
- App demonstration
- App code drilldown
- If we have time
 - Hosted in Bluemix Cloud Foundry NodeJS
 - Bluemix Cloudant No-Sql Json document store
 - Released using IBM jazz repository, build, deploy pipeline
 - Continuous Integration demonstration

App Requirement

- https://youtu.be/R1gqOKYrL_E this is a one minute video
- People want more information and are asking more questions about products they buy, use and consume
- Customers want transparency
 - Nutrition
 - Ingredients
 - Allergens
 - Other information
- Customers need immediate access
 - Mobile Web
 - Scan QR code
 - <http://smartlabel.YourBrand.com/productfood/nutrition/:id>

App flow





Angular 2 Universal main ingredient?

- Single Page Application (SPA)
 - Pros
 - Better performance
 - Better user experience
 - Cons
 - Difficult optimizing Search Engine Optimization (SEO)
 - Slow initialization

How do we mediate SPA cons?

- Server Side Rendering (SSR)
- Isomorphic JavaScript: it renders on both Client and Server.
- First page “hit” is server rendered, then SPA takes over.
- Angular 2 Universal is not alone:
 - Meteor
 - Asana
 - Rendr
 - React
 - There are others
- Demo <chrome://settings/content>

Other Angular 2 Universal ingredients

- TypeScript: ES6 and ES7 => ES5, advanced features => current...
- Visual Studio Code: intellisense, plugins, IBM Bluemix
- Node Version Manager (NVM)...
- Node Package Manager (NPM)...
- WebPack: bundler for JavaScript, packs many modules...
- NodeJS: event driven, non-blocking I/O model, light weight...
- Express: minimal and flexible web application framework...
- RxJS, asynchronous, event based, stream support...
- Modules, Components, Forms, Routing, Pipes, Directives, Services...
- Deserves a whole talk on ...

Angular 2 Universal code drilldown

- SmartLabel has two major parts a client and a server
- Webpack.config.ts Note: Microservices too
- src/client.ts
 - src/main.browser.ts
- src/server.ts
 - src/main.node.ts: customize
 - src/server set up, index.html, and services

Angular 2 App, Routes, Modules

- `src/app.ts`
- `src/app.routes.ts`
- `src/main.browser.ts`
- Decorator `@NgModule`
- Introduce App, Universal Module, Root routes
- Application Shell
- Router-outlet
- Your module

Html Routes server side

```
app.get('/', ngApp);
```

```
app.get('/productfood/...', ngApp);
```

```
app.get('/productfood/nutrition/:id', ngApp);
```

```
app.get('/productfood/ingredients/:id', ngApp);
```

```
app.get('/productfood/allergens/:id', ngApp);
```

```
app.get('/productfood/otherinformation/:id', ngApp);
```

```
app.get('/productfood/companybrand/:id', ngApp);
```

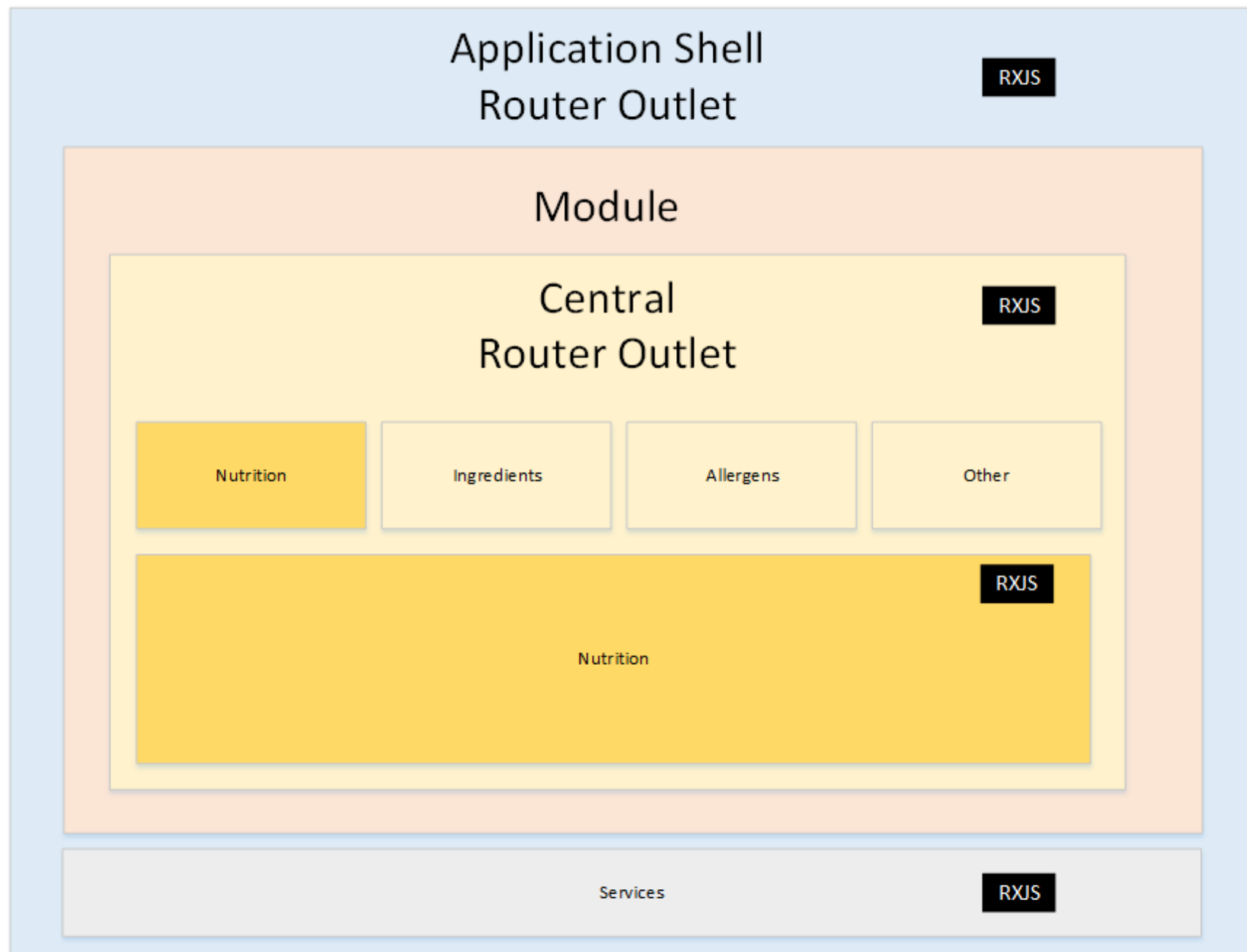
```
app.get('/productfood/*', ngApp);
```

Data routes server side

```
import { ProductFoodsServer } from './backend/productfoods.server';
let productFoodsServer = new ProductFoodsServer().initProductFoodsServer(appEnv);
app.get('/api/v1/productfoods', (req, res) => {
    productFoodsServer.productFoodsServer(req, res)
});
```

```
import { ProductFoodServer } from './backend/productfood.server';
let productFoodServer = new ProductFoodServer().initProductFoodServer(appEnv);
app.get('/api/v1/productfood/:id', (req, res) => {
    productFoodServer.productFoodServer(req, res);
});
```

Browser



RxJS Note:search SharedSmartLabelService

- `src/services/sharedsmartlabel.service.ts`
- `src/app/productfood/productfood.module.ts`
- `src/app/productfood/productfoodcenter.component.ts`
- `src/app/productfood/productfoodlist.component.ts`
- `src/app/productfood/productfoodnutrition.component.ts`
- `src/app/productfood/productfoodingredients.component.ts`
- `src/app/productfood/productfoodallergens.component.ts`
- `src/app/productfood/productfoodotherinformation.component.ts`

How did I get here

- Investigate Mobile, Web and Cloud...
 - React Cordova...
 - Ionic 2 Cordova...
 - Angular 2 Universal...
 - Bluemix Cloud Foundry (CF): Ruby, NodeJS...
 - Bluemix Docker...
 - Bluemix Watson...
 - Bluemix OpenWhisk...
 - Bluemix Cloudant...
- Deserves a whole talk on ...
- SmartLabel: Angular 2 Universal, CF NodeJS, OpenWhisk and Cloudant

Cloud Foundry wrapper server side

```
// cfenv provides access to your Cloud Foundry environment
// for more info, see: https://www.npmjs.com/package/cfenv
var cfenv = require('./cfenv-wrapper');
```

```
// get the app environment from Cloud Foundry
var appEnv = cfenv.getAppEnv();
```

Env.json

Env_custom.json

Cloud Foundry manifest

applications:

- path: .
command: node dist/server/index.js
memory: 128M
instances: 1
domain: mybluemix.net
name: smartlabel
host: smartlabel-shoprite-dev
disk_quota: 1024M

Bluemix Continuous Integration

- Bluemix Jazz repository
- `git checkout -b NameOfBranch`
- Edit source code
- `git checkout master`
- `git commit -a`
- `git branch -d NameOfBranch`
- `git push origin master`
- Bluemix build: 4 minutes
- Bluemix deploy: 2 minutes