
AngularBlast!
Rapid Fire ngUpgrade

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Auth0, Angular GDE

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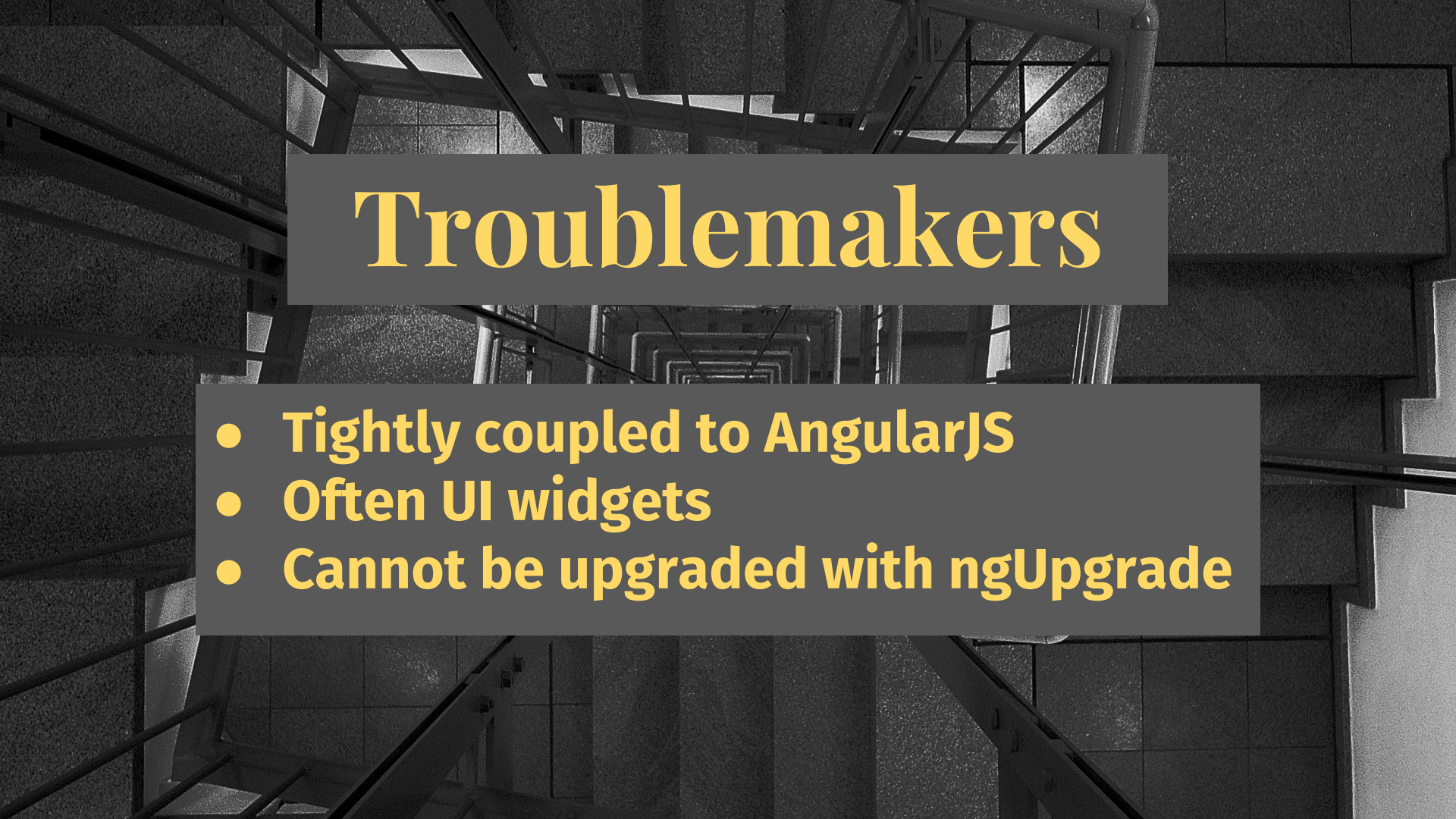
Wrangling Dependencies During ngUpgrade


Take Inventory 🤔

Inventory Steps 📋

1. Look through package.json (or vendor folder).
2. What is this?
3. Where is it used?
4. Identify potential troublemakers.



Troublemakers

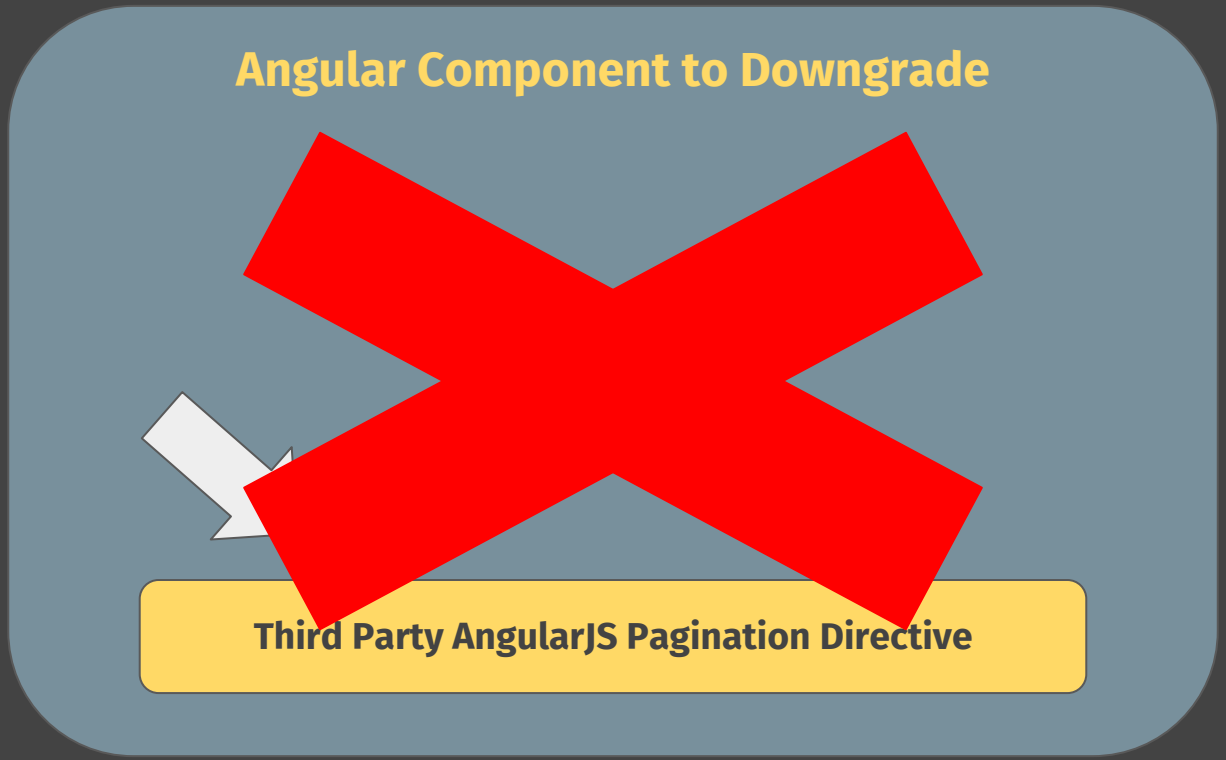
- Tightly coupled to AngularJS
- Often UI widgets
- Cannot be upgraded with ngUpgrade

AngularJS Component to Rewrite

Third Party AngularJS Pagination Directive

Angular Component to Downgrade

Third Party AngularJS Pagination Directive


Angular Component to Downgrade
Third Party AngularJS Pagination Directive

Dependency Triage

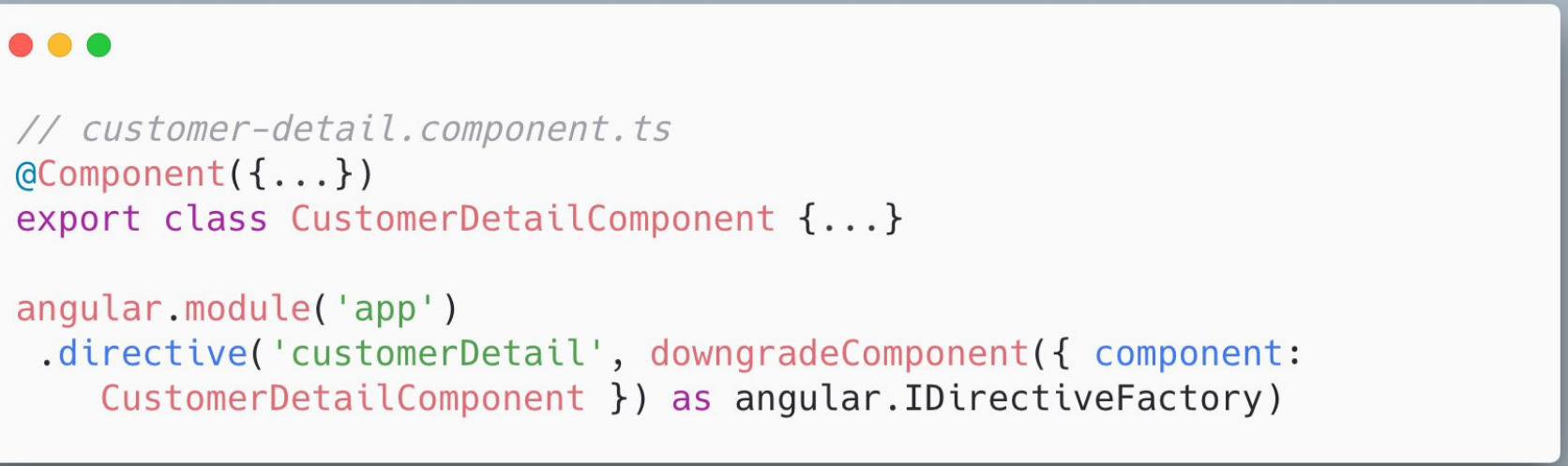
Determine:

- **Ditch - not used anymore**
- **Upgrade - a new version for Angular 2+ (sometimes prefixed with "ngx" or "ng2")**
- **Rewrite - no upgrade but can do in house (often for directives or transclusion)**


Webpack for ngUpgrade

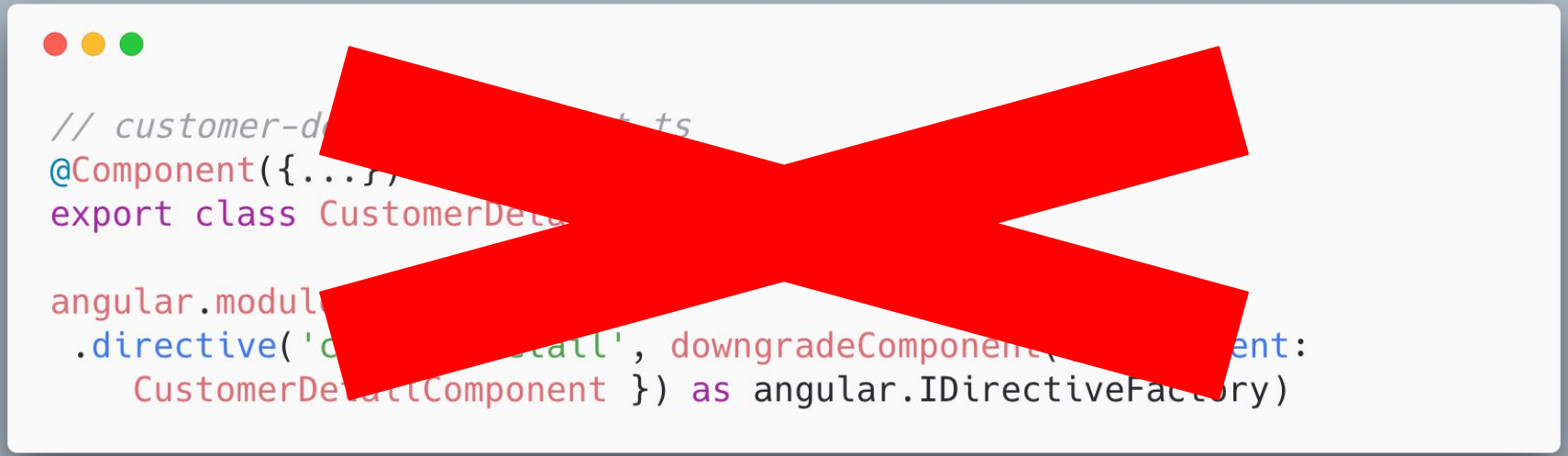
AOT ~~Do's and~~ Don'ts

- ❌ Default exports
- ❌ Private template variables
- ❌ Arrow functions in useFactory or useValue
- ❌ Mixing AngularJS & Angular code



```
// customer-detail.component.ts
@Component({...})
export class CustomerDetailComponent {...}

angular.module('app')
 .directive('customerDetail', downgradeComponent({ component:
    CustomerDetailComponent }) as angular.IDirectiveFactory)
```


// customer-d ts
@Component({...})
export class CustomerDet
angular.modul
.directive('c tail', downgradeComponent(ent:
CustomerDetailComponent }) as angular.IDirectiveFactory)

```
// app.module.ajs.ts
angular.module('app')
// other registrations
 .directive('customerDetail', downgradeComponent({ component:
        CustomerDetailComponent }) as angular.IDirectiveFactory)
 .factory('customerService', downgradeInjectable(CustomerService));
```


@ngtools/webpack
(For production builds.)

angular / angular-cli

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Code | Issues 1,305 | Pull requests 14 | Wiki | Insights

Branch: master ▾ angular-cli / packages / ngtools / webpack / | Create new file | Upload files | Find file | History

alan-agius4 and alexeagle feat(@ngtools/webpack): add support for `TypeScript` 3.1 — Latest commit 0aea618 2 days ago

..

src	build: update webpack types	6 days ago
README.md	feat(@ngtools/webpack): allow passing in the right ContextElementDepe...	4 months ago
package.json	feat(@ngtools/webpack): add support for `TypeScript` 3.1	10 hours ago

README.md

Angular Ahead-of-Time Webpack Plugin

Webpack 4.0 plugin that AoT compiles your Angular components and modules.

Usage

In your webpack config, add the following plugin and loader.

Angular version 5 and up, use `AngularCompilerPlugin`:

```
import {AngularCompilerPlugin} from '@ngtools/webpack'

exports = { /* ... */
  module: {
    rules: [
      {
```

```
// webpack.prod.js
const ngToolsWeback = require('@ngtools/webpack');
// other imports...

module.exports = {
  entry: {...},
  output: {...},
  module: {
    rules: [
      {
        test: /(?:\.ngfactory\.js|\.ngstyle\.js|\.ts)$/,
        use: '@ngtools/webpack',
        exclude: [/node_modules/, path.resolve(__dirname, './src/main.ts')]
      }
      // other rules...
     ],
  },
  plugins: [
    new ngToolsWeback.AngularCompilerPlugin({
      tsConfigPath: './tsconfig.aot.json',
      entryModule: path.resolve(__dirname, '../src/app.module.ts#AppModule')
    })
    // other plugins...
  ]
}
```


webpack-merge
(For multiple environments.)

survivejs / webpack-merge

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Code | Issues 19 | Pull requests 4 | Projects 0 | Wiki | Insights

Merge designed for Webpack (MIT) https://www.npmjs.com/package/webpack...

338 commits | 6 branches | 58 releases | 19 contributors | MIT

Branch: master | New pull request | Create new file | Upload files | Find file | Clone or download

bebraw Merge pull request #105 from escapedcat/patch-1 ... Latest commit ef6dfb3 13 days ago

src	fix: smart merge should maintain existing loader order	4 months ago
tests	fix: smart merge should maintain existing loader order	4 months ago
.babelrc	refactor - Depend only on lodash	2 years ago
.eslintrc	fix - let -> var	2 years ago
.gitignore	Set up code coverage checking	2 years ago
.travis.yml	chore: Update Travis	4 months ago
CHANGELOG.md	chore(docs): Add changelog for 4.1.4	2 months ago
CONTRIBUTORS.md	chore: Add @DanielRuf to contributors	2 months ago
ISSUE_TEMPLATE.md	Add issue template	2 years ago
LICENSE	Initial commit	3 years ago
README.md	chore(docs): add build info #104	13 days ago
package-lock.json	4.1.4	2 months ago
package.json	4.1.4	2 months ago

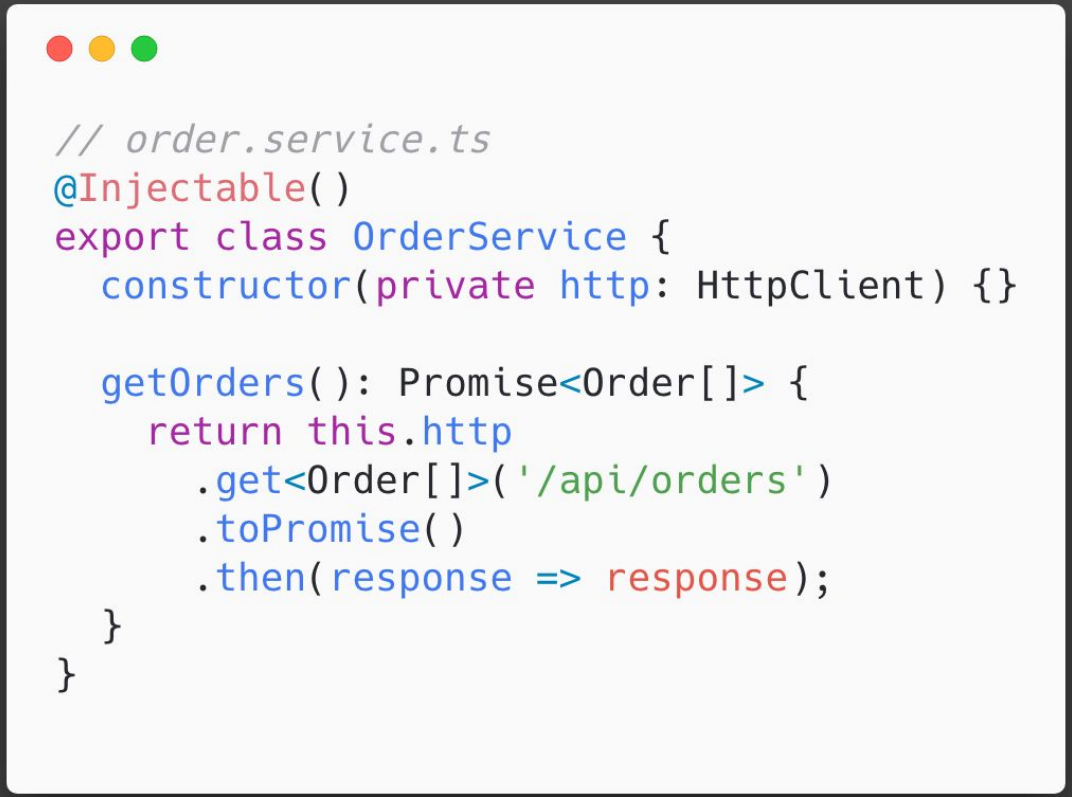
```
// webpack.config.js
const webpackMerge = require('webpack-merge');
const commonConfig = require('./webpack-configs/webpack.common');

module.exports = (env) => {
    const envConfig = require(`./webpack-configs/webpack.${env.env}.js`);

    return webpackMerge.smart(commonConfig, envConfig);
}
```


Migrating to RxJS


Ugh.

"First migrate, then get fancy."

Use toPromise



```ts
// order.service.ts
@Injectable()
export class OrderService {
  constructor(private http: HttpClient) {}

  getOrders(): Promise<Order[]> {
    return this.http
      .get<Order[]>('/api/orders')
      .toPromise()
      .then(response => response);
  }
}
```

```ts
// order.service.ts
@Injectable()
export class OrderService {
  constructor(private http: HttpClient) {}

  getOrders(): Promise<Order[]> {
    return this.http
      .get<Order[]>('/api/orders')
      .toPromise()
      .then(response => response);
  }
}
```

Replace q.all with forkJoin

```
// order-detail.ts (AngularJS)
vm.$onInit = function() {
  let promises = [productService.getProducts(),
      customerService.getCustomer(vm.order.customerId)];

  return $q.all(promises).then((data) => {
    var products = data[0];
    vm.customer = data[1];
    vm.order.items.forEach(function (item) {
      var product = _.find(products, function (product) {
        return product.id === item.productId;
      })
      item.productName = product.name;
      item.itemPrice = item.quantity * product.price;
    });
  });
};
```

```
// order-detail.component.ts (Angular)
ngOnInit() {
  forkJoin([
    this.productService.getProducts(),
    this.customerService.getCustomer(this.order.customerId)
  ]).subscribe(data => {
    var products = data[0];
    this.customer = data[1] as Customer;
    this.order.items.forEach((item) => {
      var product = _.find(products, (product) => {
        return product.id === item.productId;
      });
      item.productName = product.name;
      item.itemPrice = item.quantity * product.price;
    });
  });
}
```

Caveats!

- Three musketeers:
  - One delay, all delay
  - One fails, all fail (can be adjusted)

Learn the basics of RxJS outside of Angular

Rx Workshop

In-person and remote hands-on workshops from makers of RxJS. Learn reactive programming in Node and JavaScript and TypeScript.

RxJS Beyond the Basics: Operators in Depth

RxJS >5.0.0-beta.1 <5.4.3

89m

BY André Staltz

Open source hacker and former web and mobile developer at Futurice. Andre is known for his involvement with reactive programming for user interfaces, particularly with RxJS. He has built JavaScript libraries and frameworks such as Cycle.js, xstream, react-native-node, and others.

Angular In Depth sponsored by ag Grid

THANK YOU!

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