


DSpace 7 UI Technology Stack

Workshop/training materials available

 **Update June 2017:** A DSpace Angular UI workshop was held at OR2017. This workshop provided an basic overview of the Angular framework, along with hands-on exercises for all attendees. All workshop materials are available online at: [OR2017 DSpace Angular Workshop](#).

The new DSpace UI is being implemented on the widely used [Angular](#) client side framework. In addition to delivering a more responsive user experience, client side frameworks allow for a more rapid development cycle. The UI code is built in [TypeScript](#), a typed super set of JavaScript, that was developed specifically for the implementation of sizable web applications. In fact Angular itself is developed in TypeScript.

The UI works with the DSpace REST API to access and modify data. It relies on [RxJS](#) to manage control flow which is driven by the (asynchronous) communication between the two applications. The [@ngrx](#) package helps maintain a predictable state representation.

The new UI uses [Angular Universal](#) to render initial page requests on the server side, which greatly improves the initial page load time. As a nice benefit, search engines requesting pages do not have to deal with client side page rendering. Crawlers working through a list of URLs will always be presented with a page rendered on the server.

[Node.js](#) is the server technology used with JavaScript web application and thus with Angular. As an asynchronous event driven JavaScript runtime, Node is designed to build scalable network applications like web based user interfaces.

[Npm](#) stands for Node Package Manager. In fact installation instruction for the user interface at [GitHub](#) essentially consist of the command 'npm install', followed by 'npm start' to start a local server.

Typescript

- [This wiki page](#) explains the rationale for using typescript in more detail
- The [Official documentation](#) for the TypeScript language includes links to sample code, as well as a [live in-browser editor/samples](#).

Angular

- [Official Angular.io site](#) - with documentation, quick start, and API references, and a [style guide](#)
- [Angular @ GitHub](#) - code base and place to submit issues
- [Getting Started Video Tutorial](#) by [Deborah Kurata](#)
- [Angular Blog](#) - updates and blog posts from the Angular team.
- [Angular Forum](#) - Google Discussion Group
- [Scotch.io](#) - article collection and HowTos

Other Packages

- [RxJS](#) - JavaScript implementation of [ReactiveX](#), which describes itself as an API that combines the Observer pattern with iterators and functional programming. It facilitates the type of event/data driven programming that is common in web applications. The RxJS GitHub repo contains [Resources and Links to Tutorials](#); [André Staltz](#) wrote a good [introduction to Reactive Programming](#)
- [@ngrx](#) is an implementation of Redux for Angular 2. The main [Redux documentation](#) describes the general concepts. [Angular 2—Introduction to Redux](#) is an Angular specific how to. [Getting Started with Redux](#) is a 2h video course on egghead
- [ngx-translate](#) - supports multilingual text display

Node.js and Npm

- [node.js](#) - official site
- [npm](#) - official site
- [npm-check-updates](#) - npm package dependency management

Angular Universal

- [Official Angular Universal Site](#)
- [Here's](#) a high level explanation
- [Universal GitHub](#) - with documentation and a few videos
- [William Welling](#) has a [test project](#) to experiment with Angular Universal.

Additional DSpace 7 Resources

- [DSpace 7 - Angular UI Development](#)
- [DSpace 7 UI - TypeScript](#)
- [North American DSUG 2019 - Getting Started With DSpace 7 Workshop](#)
- [OR2017 DSpace Angular Workshop](#)
- [OR2018 DSpace Angular Workshop](#)
- [OR2019 Getting Started with DSpace 7 Workshops](#)