North American DSUG 2019 - Getting Started With DSpace 7 Workshop

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This page is for attendees of the 2019 DSpace North American User Group Meeting “Getting Started with DSpace 7” workshop. It provides links to resources, workshop preparation, etc.

Slides

Learning Objectives
- Learn about upcoming DSpace 7 release
- Overview of the Install & Upgrade processes
- Understand new features of this release, including demos of the new User Interface and REST API
- Learn the basics of branding / theming the new User Interface (hands-on)

Workshop Organizers
- Tim Donohue - DSpace Tech Lead at LYRASIS
- Based heavily on the OR2019 Getting Started with DSpace 7 Workshops, which were co-taught with Art Lowel (Atmire) and Andrea Bollini (4Science)

Preparing for the workshop

Handons on the new DSpace UI

Optional Installation
During the code walkthrough, we will be working directly with the dspace-angular project (this is the DSpace 7 UI, built on Angular). However, don’t worry. It’s rather easy to install, and you do not need to install the DSpace backend (as we will be using the public, demo REST API as our backend).

Installing the DSpace 7 UI locally
(These instructions are based on the dspace-angular README)
- Git: You’ll want to have Git to simply clone and install our dspace-angular project (this is the in-development Angular UI for DSpace 7). If you don’t have Git, you can choose to install either GitHub Desktop (which includes a GUI) or just plain Git. Any version of Git is fine.
- Node.js (version 8.x recommended): Required to build/run the Angular UI.
  - Note: Node.js will also automatically install npm (Node Package Manager). You shouldn’t need to install that separately
- Yarn (version 1.3.x or above): This is an easier to use, speedier package manager that works similar to npm (Node’s package manager). It’s currently required to build Angular UI.
- dspace-angular: You can now install dspace-angular (the DSpace 7 UI) using the command line.
  1. git clone https://github.com/DSpace/dspace-angular.git (Pulls down the code into a dspace-angular folder on your local computer)
  2. cd dspace-angular (Move into the newly created dspace-angular folder)
  3. yarn install (Install all local dependencies via yarn)
  4. yarn run watch (Build and startup the DSpace Angular UI, while watching code for new changes.)
    - Alternatively, you can also run "yarn start", but that command requires you restart to pick up local code changes.
  5. Assuming all went well, you should be able to go to http://localhost:3000 in your web browser and see the DSpace 7 UI homepage.
- Now, to easily follow along with the workshop code changes step-by-step, you may wish to create a branch for the workshop exercises

That’s it! Again, there is no need to have the DSpace backend running or install a database, Java, Tomcat or any of the other usual DSpace prerequisites.
Creating a branch for the exercises

To follow along with the exercises run the following git commands in the project directory to get the correct starting point:

1. git remote add workshop https://github.com/DSpace-Labs/dspace-angular-workshops.git
2. git fetch --tags workshop (Pulls down the dspace-angular-workshops code locally, including tags)
3. git checkout na-dsug2019-start (Checks out the starting point of the workshop, the "na-dsug2019-start" tag)
4. git checkout -b na-dsug2019-basic (Creates a local branch named "na-dsug2019-basic" for you, based on that "na-dsug-2019-start" tag)

At certain points during the hands-on part we'll show a git tag that corresponds to the solution so far. If you'd like to sync up to that point, run the following:

1. Revert all existing files to their state at the start:
   - git reset na-dsug2019-start --hard
2. Remove any newly created files
   - git clean -f -d
3. Sync with the solution
   - git merge $TAG_NAME

Optional Development Tools

While not required, the following tools may make it easier to do basic development with the Angular UI.

- Chrome web browser: When developing an Angular application, all web browsers are not created equal. While you obviously should use other browsers to help test your application, Chrome has built in debugging/visualization tools that come in handy when doing Angular development. Make sure you disable cache in your network tab and keep the inspect element open.
- An IDE: If you wish to do much Angular development (especially for the "Advanced Workshop"), you may want an IDE (Integrated Development Environment) or an editor that understands the TypeScript language. Here's a few we prefer. Just choose ONE. If you have no strong preference, you may want to start with Visual Studio Code.
  - Visual Studio Code (Free): This is a TypeScript IDE from Microsoft (the makers of TypeScript). It's frequently used for Angular development, even by some of the main Angular developers, and provides an excellent debugger for Chrome (which you may also wish to install for easier debugging)
  - IntelliJ (Requires a license): If you use IntelliJ already for other development work, IntelliJ IDEA Ultimate has TypeScript support. You could also use WebStorm, IntelliJ's Javascript IDE
  - Atom.io (Free): This is an advanced text editor from the makers of GitHub. If you install the Typescript language plugin, it acts a little more like a basic IDE for TypeScript / Angular (providing autocomplete and highlighting). However, be forewarned that it doesn't have the debugging capabilities of Visual Studio Code or IntelliJ.
  - Any other editor or IDE that provides either TypeScript or Angular 2 support.

Solution tags

Click on the commit hashes for each of the tags in the "releases" to see all code changes for each of the steps of the workshop:

https://github.com/DSpace-Labs/dspace-angular-workshops/releases

Additional Resources

- DSpace 7 UI Technology Stack: Technology overview with link to tutorials on Angular, etc
- DSpace 7 - Angular UI Development: How to contribute to Angular UI
- DSpace 7 REST Contract: Details about available and planned endpoints, request and response format, error codes, etc.
- DSpace 7 REST Coding practice: Key classes and source code organisation of the JAVA REST API Backend
- DSpace Release 7.0 Status: Status of the release, demo sites, etc.
- Get more involved!
  - DSpace 7 Working Group (2016-2023): The DSpace 7 development team. Anyone is welcome to attend meetings, even just to lurk & listen in.
  - DSpace 7 Entities Working Group (2018-19): The sub-team working on the Configurable Entities feature for DSpace 7. Anyone is welcome to attend meetings, even just to lurk & listen in.