DSpace 7 Preview Release

This page is now OUTDATED/OBSOLETE. Please see Release Notes for the latest 7.0 beta release, Try out DSpace 7 for instructions on installing it locally, or DSpace 7 Release Goals for the release schedule.
Please keep in mind that, as a "preview" of 7.0, this release does **not** include all DSpace features. It is **NOT PRODUCTION READY**. Where a feature is not yet available, we've greyed out / disabled the link in the user interface. All missing features will be implemented prior to the Beta and final release of 7.0. See DSpace Release 7.0 Status for more details on estimated timelines, etc.

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Overview

DSpace 7 brings to DSpace a single, modern user interface and REST API and integrates current technological standards and best practices. This new UI combines with the existing core backend of DSpace 6, resulting in a lean, responsive, next-generation repository.

The preview release provides a first look at many of the new features that make DSpace 7 the largest development effort in the history of the software:

- **New Angular UI** that is modern, responsive, and built using a Bootstrap theme for easy customization. *See demo site at https://dspace7-demo.atmire.com/*
- **A completely redesigned REST API** that is self-documenting and human browsable. *See demo site at https://dspace7.4science.cloud/dspace-spring-rest/*
- **Redesigned submissions and workflows** featuring a one page submission process with a drag-and-drop interface, and automatic metadata extraction from common formats like PDFs.
- **Configurable entities**, an optional new item type inspired by the DSpace-CRIS project that allows for complex linked relationships between items. DSpace 7 will include the option to implement this feature for two use cases popular with the DSpace community:
    - **Journal Hierarchy**: create and link objects for a Journal, Volume, Issue, Article, and Author
    - **Faculty & Organizational Units**: a lightweight, CRIS-like option to represent Projects, Faculty, Department/Unit, Publication, etc.
    - A deep-dive into Configurable Entities can be found in the DSpace 7 Configurable Entities early documentation (Google Doc)

Configurable entities help to better align DSpace with Next Generation Repository recommendations related to Identifiers as well as alignment with OpenAIRE v4.

DSpace 7 builds on DSpace 6 to create a modern and future-focused repository. The backend restructuring from DSpace 6 is retained and combined with the features above to create a powerful repository designed to address current user needs and plan for future standards.

DSpace 7 is the first version of DSpace to be developed using test-driven development practices designed to identify and address issues earlier in the development process and lead to more stable releases. It is also the first release to use a working group model for decisions related to design and development.

Try it out using the Demo Site

If you want to quickly test out the DSpace 7 Preview Release, you may do so using our demo site.

- **DSpace 7 User Interface Demo: https://dspace7-demo.atmire.com/** (Login: dspacedemo+admin@gmail.com , Password: dspace)
- **DSpace 7 REST API Demo: https://dspace7.4science.cloud/dspace-spring-rest/** (Login: dspacedemo+admin@gmail.com , Password: dspace)
    - REST Contract / Documentation is available at: https://github.com/DSpace/Rest7Contract/blob/master/README.md

Keep in mind, our User Interface Demo uses the REST API Demo as the backend. So, any content created (by anyone) will immediately appear in both locations.

Installation

For this Preview release, we offer three different ways to install / run DSpace 7 locally. The route you choose may depend on exactly what you'd like to try out. *Choose ONE of the following:*

1. DSpace 7 Preview Release#Install via Docker (*Recommended for most*)- This is the easiest/quickest way to get *everything* running locally (no matter your technical skills). We even have a script to automatically load some test data and test accounts into your Docker instance.
2. DSpace 7 Preview Release#Install the User Interface only, while using the demo REST API backend - This is the easiest way to try out just the User Interface locally. Keep in mind, by default, the User Interface will be installed to use our DSpace 7 REST API Demo as a backend. Therefore, you will be interacting with the content on that demo site and will need to use the login information for the demo site (see above)
3. Install *both* the User Interface and REST API locally (*bring your own test content*). This is a fully manual local installation. Keep in mind this installation process is may still change slightly before the final 7.0 release.

Install via Docker

Running DSpace 7 via Docker allows you to quickly & easily install and start up all the "parts" of DSpace (database, Solr index, REST API, user interface) without having to install them all yourself. This will work on *any operating system* (Windows 10, Mac OS, or Linux).

Video walkthrough available

If you are a visual person, a walkthrough of these Docker installation steps are also available at: https://dspace-labs.github.io/DSpace-Docker-Images/documentation/tutorialSetup.html

Additionally, if you would like a more detailed overview of Docker and how to run *other versions* of DSpace via Docker, please see the recording of the DuraSpace Webinar "DSpace Docker for Repository Managers". (Keep in mind, that webinar recording does not cover the steps to run the DSpace 7 Preview Release specifically, so you will still need to run step #2 below).

1. First, install the necessary prerequisites. You will just need to install three things: Docker Desktop (to run Docker), Git (to access our shared Docker compose files) and finally download those shared Docker compose files.
    a. Instructions for Windows 10
    b. Instructions for Mac OS
    c. Instructions for Linux
2. Next, run the "DSpace 7 With Entities" Docker compose commands detailed at: https://dspace-labs.github.io/DSpace-Docker-Images/documentation/run.DSpace7Entities.html
    a. We recommend using the "DSpace 7 Preview Release" commands detailed on that page, as those will ensure you also see the new sample DSpace 7 Theme (tentatively titled "Mantis")
    b. If you'd rather see the default Bootstrap look and feel (unthemed DSpace 7), use the "latest DSpace 7" instructions listed on that page.
3. After a few minutes, you should have a full local installation of DSpace 7 Preview (with test data).
    a. User Interface: http://localhost:3000/
    b. REST API: http://localhost:8080/spring-rest
    c. Admin Login: dspacedemo+admin@gmail.com, Password: dspace
    d. Submitter Login: dspacedemo+submit@gmail.com, Password: dspace
    e. Workflow Login accounts:
        i. step 1: dspacedemo+acceptreject@gmail.com, Password: dspace
        ii. step 2: dspacedemo+acceptrejectedit@gmail.com, Password: dspace
        iii. step 3: dspacedemo+edit@gmail.com, Password: dspace
4. Objects/Pages of interest (within the test data):
    a. Journal Example represents a journal with journal volumes, issues and articles, as detailed in the Configurable Entities Design.
    b. Publications Example contains publications which contain a combination of plain-text authors and related author entities. It also contains relations to Research Projects and Organizational Units, as detailed in the Configurable Entities design. Navigating to e.g. a Person will reveal their relations to Publications, Research Projects and Organizational Units.
    c. Submission/Workflow functionality can be tested using one of the collections in this community where the workflow is enabled. You can use the accounts mentioned above to perform the submission and workflow steps. The admin account can perform the submission and all workflow steps as well.
    d. Once logged in, MyDSpace functionality is found in the user menu (upper right). Submissions can be started from that page, or via the "New Item" admin menu (if logged in as an Admin).
5. Once you are done testing, you can stop Docker and clean up the data (deleting the volumes). More information can be found in the instructions at https://dspace-labs.github.io/DSpace-Docker-Images/documentation/run.DSpace7Entities.html

Install the User Interface only

Running only the DSpace 7 user interface can be done quickly & easily on any operating system (Windows, Mac OS, or Linux). By default, the installed user interface will use the DSpace 7 REST API Demo (https://dspace7.4science.cloud/dspace-spring-rest/) as its backend. This means that you will immediately see test data (from that demo site) and be able to interact with it. However, you will need to authenticate using the REST API Demo account. Any changes you make will also obviously appear on that shared REST API Demo site.

1. First, you will need to install the necessary prerequisites.
    a. Git is required. If you do not already have it installed (try running `git version` at your command line), you can install it via https://git-scm.com/downloads (or via your local package manager tools for Linux or Mac OS)
    b. Node.js (v8.x or above) is required. Installing the latest LTS (Long Term Support) version, currently 10.x, is perfectly fine.
        i. NPM (v5.x or above) is required. Don't worry, this gets installed with Node.js though, so you don't need to do anything extra here.
    c. Yarn (v1.x or above) package manage. Just install the latest stable version (currently 1.16.x).
2. Then, download our "dspace-angular" application (which is the DSpace 7 user interface) and run it. All you should need to do is the steps in the "Quick Start" at: https://github.com/DSpace/dspace-angular/#quick-start

```
# clone the repo
git clone https://github.com/DSpace/dspace-angular.git

# change directory to our repo
cd dspace-angular

# Checkout the "preview" release branch
git checkout preview

# install the local dependencies
yarn install

# start the server
yarn start
```

3. After a few minutes, the user interface will be running on your local machine. Again, it will be accessing the REST API Demo site, so a stable internet connection is required.
    a. User Interface: http://localhost:3000/
    b. REST API (remote demo site): https://dspace7.4science.cloud/dspace-spring-rest/
    c. Admin Login: dspacedemo+admin@gmail.com, Password: dspace
    d. Submitter Login: dspacedemo+submit@gmail.com, Password: dspace
4. Objects/Pages of interest (within the test data):
    a. Journal Example represents a journal with journal volumes, issues and articles, as detailed in the Configurable Entities Design.
    b. Publications Example contains publications which contain a combination of plain-text authors and related author entities. It also contains relations to Research Projects and Organizational Units, as detailed in the Configurable Entities design. Navigating to e.g. a Person will reveal their relations to Publications, Research Projects and Organizational Units.
    c. Submission/Workflow functionality can be tested using one of the collections in this community where the workflow is enabled. You can use the accounts mentioned above to perform the submission and workflow steps. The admin account can perform the submission and all workflow steps as well.
    d. Once logged in, MyDSpace functionality is found in the user menu (upper right). Submissions can be started from that page, or via the "New Item" admin menu (if logged in as an Admin)
5. One you are done testing, you can stop the locally running DSpace 7 user interface via `Ctrl+C`

Install both the User Interface and REST API locally

This installation process describes manually installing both the frontend (User Interface) and backend (REST API) of DSpace 7 on a local machine. *The frontend and backend need not be installed on the same machine.*
Keep in mind the installation process here may change prior to DSpace 7.0 final. This should be considered an early version of the installation process.

1. First, install the User Interface and ensure it is successfully running against the REST API Demo site. See the instructions under DSpace 7 Preview Release#Install the User Interface only (above). Remember, you can choose to install this on the same machine as the REST API, or on an entirely different machine.
2. Then, install the REST API. The REST API installation process is *very similar* to the installation process for DSpace 6 or below (so if you are familiar with installing DSpace already, this will be familiar to you).
    a. Required Prerequisites for the DSpace 7 REST API are listed at Installing DSpace (OLD - to be removed). These include:
        i. Java JDK 8 (OpenJDK or Oracle). OpenJDK is recommended. (Note: Java 7 is no longer supported.)
        ii. Apache Maven 3.3.x or above.
        iii. Apache Ant 1.8 or above.
        iv. Relational Database. Either PostgreSQL 9.4 (or above) or Oracle 10g (or above)
        v. Servlet Engine. Apache Tomcat 8 (or above) is recommended.
        vi. Apache Solr 7.2.1 or above. (NOTE: This is a new requirement for DSpace 7. You MUST install Solr separately from DSpace as it is no longer provided out-of-the-box.)
    b. Installation is very similar to that of DSpace 6.x. Draft installation instructions for the DSpace 7 REST API are available at Installing DSpace (OLD - to be removed)
        i. Pay close attention to a **new installation step** (#11 in that list). Because Solr is now a separate install, you need to copy the DSpace Solr core configurations into your Apache Solr installation location.
    c. If you have an existing test/demo version of DSpace 6.x locally, you can optionally choose to upgrade it to the DSpace 7 Preview Release. DO NOT DO THIS IN PRODUCTION AS THE UPGRADE IS EXPERIMENTAL AT THIS TIME.
        i. Keep in mind, your old UI changes will not be upgraded as the XMLUI and JSPUI no longer exist in DSpace 7. Therefore, only your data (in your database and assetstore) will be upgraded.
        ii. To upgrade your data, Install the DSpace 7 REST API (as noted above) on top of a copy of your existing DSpace 6.x test/demo instance. We *highly recommend* doing this upgrade on a copy of your DSpace 6.x instance, as you cannot "undo" it. (NOTE: Make sure you are running a valid version of all prerequisites, and have installed Solr separately)
        iii. You will also need to perform step #11 in the Installation instructions (see above) in order to configure your Apache Solr installation properly.
        iv. After you start up the DSpace 7 REST API, you will need to reindex all your content by running: `[dspace]/bin/dspace index-discovery -b`
            1. NOTE: At this time we are NOT yet able to upgrade DSpace 6.x (or below) Solr statistics. A procedure for that upgrade will be coming in the future.
    d. Once it is running locally, your REST API should be available at: http://localhost:8080/spring-rest
        i. This assumes you are running Tomcat on port 8080 (which is its default port)
3. Once both the User Interface and REST API are installed, you will need to point your locally running User Interface at your REST API

a. In the locally installed dspace-angular project folder, modify the `[dspace-angular]/config/environment.default.js` configuration to point at your local REST API. The below settings assume your REST API is available at http://localhost:8080/spring-rest

```
// The REST API server settings.
rest: {
ssl: false,
host: 'localhost',
port: 8080,
// NOTE: Space is capitalized because 'namespace' is a reserved string in TypeScript
nameSpace: '/spring-rest/api'
}
```

b. Alternatively, if you want, you can copy the "environment.default.js" to a new file called "environment.prod.js" and modify that new file.
c. After the update is made, restart your User Interface by running: `yarn start`

4. At this point your local UI should be using your local REST API
   a. User Interface: http://localhost:3000/
   b. REST API: https://localhost:8080/spring-rest/
   c. Admin Login: You can create one on the REST API server by running `[dspace]/bin/dspace create-administrator` from the command-line (this same command was used in DSpace 6.x)