# GSoC 2011 Projects

Public DuraSpace GSoC Mailing List

If you'd like to follow along with these projects and potentially provide feedback/ideas/brainstorms to our students and mentors, please join our new DuraSpace GSoC Mailing list: http://groups.google.com/group/duraspace-gsoc/

## DuraSpace's Google Summer of Code (GSoC) 2011 Projects

**Congratulations to all accepted GSoC Students (and Mentors)!**

**DuraSpace is proud to be hosting the following GSoC projects in 2011:**

| Summary /Title | Software Platform | Description | Student | Mentor (s) |
|---|---|---|---|---|
| **DuraCloud - Eucalyptus Integration** | DuraCloud | DuraCloud currently supports Amazon S3 as a storage provider. The Eucalyptus software provides an S3 interface. This project would be to prove out the integration of DuraCloud with a private cloud managed by Eucalyptus. It may be necessary to create a new storage provider for DuraCloud to enable this integration, though it will likely be able to subclass the existing S3 provider. | Rajender Naik | Bill Branan<br><br>Andrew Woods |
| **Migrate to a modern Web service library for SOAP and support MTOM** | Fedora | Fedora has used Axis 1.3 for SOAP support for quite some time. This is an obsolete library and better alternatives (with support for MTOM and for protocols in addition to HTTP) are available. This improvement would update Fedora to use a modern Java WS framework for SOAP and move away from Axis 1.3. In addition, it would update Fedora's SOAP API to use MTOM where appropriate. For more information, see FCREPO-102 and FCREPO-452. | Jiri Kremser | A. Soroka<br><br>Chris Wilper |
| **SKOS Authority Controls** | DSpace | @Mire has prototyped a Solr driven Authority Control capable of caching and mixing together authority sources so that they can utilized for super fast term completion and lookup. Solr is quite effective for quickly retrieving lists of values that a field should be restricted to. Likewise, when the original DSpace metadata is indexed into the Solr based authority control, the Submitter is also presented with an ad-hoc authority of existing values already contained within the repository. However, it is recognized that Authority Controls Sources are not just lists and have structural components as well. SKOS applies quite well to expressing the structured relationships between taxonomies and hierarchical vocabularies that are often relied on for Authority Control. Recent research in publishing Library of Congress Subject Authorities, Getty TGN Vocabularies etcetera confirms that SKOS is the predominant form to capture these resources for placement on the web.<br><br>Create a SKOS RDF Triplestore Authority Control for DSpace that utilizes SPARQL to provide a rich queriable local cache of Authority Control Sources that may be utilized in term completion and lookup in existing Authority Controls. Extend the Authority presentation to support more useful AC exploratory widgets using jquery and AJAX.<br><br>Refer to the following projects and resources for ideas:<br>• DSpace Sesame Triplestore<br>• DSpace Tupelo Storage Service<br>• The HIVE Project: https://www.nescent.org/sites/hive/Main_Page<br>• LoC SKOS Sources: http://id.loc.gov/ | Yigang Zhou | Mark Diggory (lead)<br><br>Ryan Scherle |
| **WebMVC (Freemarker) UI development** | DSpace | WebMVC is currently under development, and is creating a new user interface based on Spring's WebMVC framework. This has the same goals as the JSPUI rewrite project in providing a clean technical implementation with business logic removed from the presentation layer.<br><br>Although a number of technologies can be used for the presentation layer, the current implementation focuses on Freemarker - a template based language that restricts the amount of logic that you can place in the presentation layer. In addition, it gives more flexibility as to where those templates can be stored, which gives greater possibilities for future customisation.<br><br>It has extensive theme support, and allows different themes to be applied to different areas of a repository.<br><br>Possible GSoC work includes ensuring parity with XMLUI where possible, or further extending the functionality. | Robert Qin Zhengquan | Graham Triggs (lead)<br><br>Peter Dietz<br><br>Stuart Lewis |
| **Submission Enhancements in DSpace** | DSpace | Of all configuration DSpace has, item-submission.xml is one which end-users would continuously want to be changing because different repository administrators would want different submission workflow .The logic to do so is simple enough that they could do it. But, being an xml file on the server gets in the middle of that. At the moment, repository admins can edit their metadata registries, bitstream format registries, etc. but still have to wait for the system administrator when they want to map a collection to a new workflow in item-submission.xml for workflow modification.<br>This project seeks to get rid of these xml files and make the equivalent with Database tables and User Interfaces for the end-user. | Gaurav Kejriwal | Mark Diggory<br><br>Scott Phillips |
| **New UI built over RESTful services** | DSpace | Currently, DSpace functionality could be accessed using JSP and XML user interfaces. As in the meantime many other technologies arrived which could provide different way of user experience and UI customization, the idea is to create a new interfaces using some of the following technologies:<br><br>• Client run interface (maybe ExtJS other JavaScript based, probably developed by the GSoC student, or JavaFX, or even Flex based) backed by REST API for DSpace.<br><br>The most important functionality this interface should deliver is user interface which has attractive look and feel and provides users with enhanced usability. Additionally, easier customization of resulting interface would be additionally appreciated. As of project complexity and project deadlines, support for many administrative functions in the interface is not so important in current stage.<br><br>Attractive, easy to use and customize interface based on currently appealing technologies would further promote DSpace capabilities and play role in its adoption. Client rendered interface based on REST would further decrease load on the server and therefore push DSpace deployment for bigger repositories.<br>Note: RESTful interface over DSpace is developed during previous years under GSoC. It has fully descriptions and specifications available at the web page specified. The interface is to be delivered and developed based on the specifications provided on REST API web page.<br>The REST interface is finished at ~90%; the testing could be done directly with the interface or in coordination with the author. | Vibhaj Rajan | Bojan Suzic (lead)<br><br>Mark Diggory<br><br>*Others?* |