



Annual Report 2012

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DuraSpace Annual Report 2012

1 Executive Summary

DuraSpace is an independent 501(c)(3) not-for-profit organization providing leadership and innovation for open technologies that promote durable, persistent access to digital data. DuraSpace collaborates with academic, scientific, cultural, and technology communities by supporting projects and creating services to help ensure that current and future generations have access to our collective digital heritage. In 2012, the focus of DuraSpace was to continue to build a sustainable business without relying on a single revenue source, continue development of our open source projects, expand our hosted services, and increase community awareness of DuraSpace's role in stewardship of the open source projects.

Over the last three years, DuraSpace has been very successful in making a strategic transition from being fully grant funded to a more diversified revenue model consisting of services, sponsorship, and grant funding. In 2009, DuraSpace was nearly 100% grant funded, while by 2012 grant funding made up only one-third of the total revenue, an important milestone in achieving long-term financial sustainability.

The organization also invested in the expansion of providing support to other open source projects within the community. VIVO, an open source web application for sharing information about researchers while supporting discovery of related work and expertise across a distributed network, was selected as the first project to be incubated under the DuraSpace umbrella. Supported by DuraSpace similar in ways to DSpace and Fedora, including community building and outreach, technical infrastructure, and administrative support, VIVO is expected to be a fully established project under the DuraSpace organization in 2014.

The focus on the DSpace and Fedora projects was to bring additional resources to increase the level of development over the coming years. Future development goals for Fedora are to improve its flexibility and scalability so that the community can broaden Fedora's usage as an enterprise-wide repository in managing multiple use cases within a single environment. The goal for DSpace was to develop a long term vision and roadmap to solidify which features and functionality will be required in the coming years to satisfy our broad base of users.

The DuraCloud archiving and preservation service, successfully launched in 2011, continued to be developed and improved upon in 2012, with an emphasis on building features and functionality to increase ease of use. Funding from the Moore Foundation allowed DuraSpace to continue to build new features in DuraCloud. In addition, DuraSpace developed several strategic partnerships that will help expand the DuraCloud service by integrating more fully with other complementary software technologies.

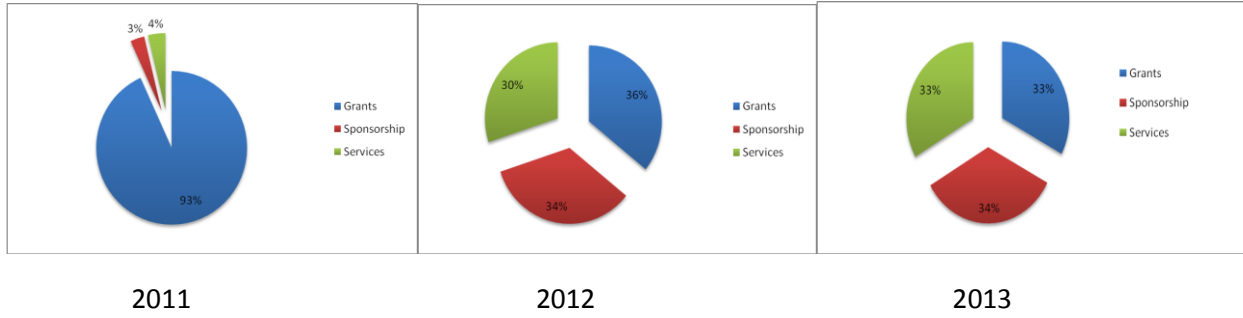
DuraSpace continues to establish key partnerships to expand our community of users and increase awareness of DuraSpace projects and services. Partnerships from 2012 include Chronopolis, Internet2, the APTrust consortium, and the Digital Preservation Network (DPN). These partnerships pursue a common goal of being able to persist our scholarly record from different vantage points. As each group brings a unique set of strengths, in combination they build a network of access and management services for scholarly content, as no single entity could achieve this independently.

Summary of DuraSpace accomplishments for 2012:

- Diversified revenue stream from being nearly 100% grant funded to being two-thirds sponsorship and service revenue funded
- Released DSpace 3.0
- Released Fedora 3.6
- Continued growth of users for the DuraCloud service
- Released six new versions of DuraCloud software
- Established as a strategic/technical leadership partner in DPN project
- Developed partnership with APTrust and completed first phase of development
- Successful offering of the E-Science course, developed originally by ARL and CLIR
- Partnered with San Diego Supercomputer Cloud storage and Chronopolis, becoming service providers as part of DuraCloud offering
- Acceptance as Netplus partner for Internet 2
- Increased sponsorship revenue by 17% in the 2012 annual sponsorship campaign
- Received Moore grant of \$860,000 for development of additional cloud services
- Launched Fedora Futures project with community stakeholders
- Completed a production prototype of DuraCloud for Research with support from the Sloan Foundation
- Created a start-up governance and funding model for the VIVO project in anticipation of its entering DuraSpace Incubation
- Initiated a series of discussions with the DSpace community on the future of DSpace

2 Financial Overview

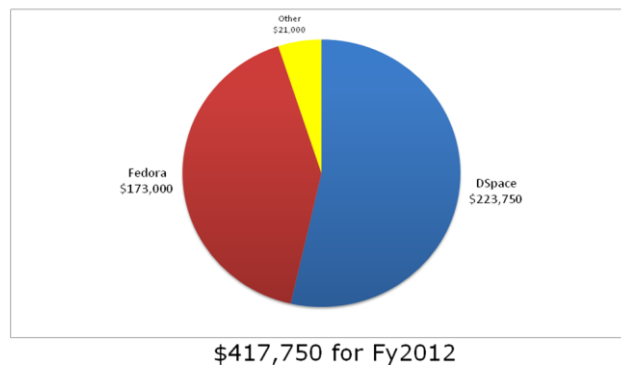
The focus in 2012 was to continue to diversify our funding streams and move from a completely grant funded organization to one that has diverse funding sources coming from a varied community of users.



A secondary focus was to become more transparent as to how funds were being allocated within the organization. As a result beginning in 2013, DuraSpace was reorganized operationally into two areas, Projects and Services. Projects are primarily funded by sponsorship revenue, while Services are primarily funded by subscription revenue and grant funding for development work.

In 2012, total revenue was \$1,187,047, where total funds from sponsorship revenue were \$417,750. Money from sponsorship was allocated to each project as shown below, based on the software platform used by the institution. For institutions using both platforms, revenue was split. For 2013, institutions are able to make a choice as to how their contributions would be allocated, to DSpace, Fedora or General Projects.

Total funds raised from sponsorship



For 2013, DuraSpace projects an increase in sponsorship revenue and services revenue while grant revenue holds flat. In future years, sponsorship revenue will grow with the addition of software projects, therefore attracting new sponsor revenue. Services will continue to grow by adding cloud based services beyond preservation and archiving. Grant revenue is projected to make up a smaller portion of the overall revenue as the focus continues to be more on growing operations and sustaining our projects, resulting in approximately twenty percent of overall revenue.

3 Marketing and Outreach

DuraSpace projects and services are used and developed by a global community working together to make scholarly resources both durable and accessible. This unique collaborative effort means that marketing, communications and outreach activities are aimed at increasing awareness and creating new opportunities, while at the same time enlisting our communities as potential customers.

The accomplishments and progress of the DuraSpace open source projects are continuously promoted through social media, publications, and webinars, as well as by participating in face-to-face events. In 2012, DuraSpace staff members took part in more than fifteen national and international conferences and meetings as organizers, speakers and presenters, including:

- PASIG (Preservation and Archiving Special Interest Group)
- Open Repositories 2012 Conference
- DSpace and Fedora User Group Meetings
- Electronic Theses and Dissertations Conference
- CNI (Coalition for Networked Information) 2012 Fall Membership Meeting
- NDSA (National Digital Stewardship Alliance) Digital Preservation 2012 Conference.

DuraSpace Marketing and Communications also supports organizational projects, services and initiatives. Marketing activities include external communications (newsletters, press releases, blog posts and web sites); marketing materials (brochures, flyers, exhibits and cards); user and customer support, sales and recruitment (personal outreach, one-on-one training, and custom email communications), and internal support (web site hosting and systems, web analytics, and communications infrastructure research. The following marketing projects were priorities for 2012:

Open Repositories 2012 Conference

As DuraSpace plays a strategic role in the management and programming of this conference, the organization invested significant marketing resources in creating a noteworthy presence, where many participants are Fedora or DSpace users or long-time DuraSpace project collaborators. DuraSpace offered presentations, marketing materials, demonstrations, DSpace and Fedora User Group meetings, and a hosted reception for more than 460 attendees from 60 countries. The annual conference is an important opportunity to market new DuraSpace initiatives while connecting with colleagues and developers on ongoing topics of interest. During OR2012, Fedora community members had an informal meeting with DuraSpace that resulted in the formation of the Fedora Futures project, to radically improve the software over the next three years.

Hot Topics Community Web Seminar Series

Curated by community leaders and produced and hosted by DuraSpace, this web series provided an ongoing forum and an audience for experts to share their knowledge with a global community of participants. Each series consists of three web seminars, recorded and made available on the DuraSpace web site. Recorded downloads were extremely popular; the fall 2012 Hot Topics Hydra series attracted more than 1,000 views of webinar recordings and more than 700 views of slides.

E-Science Institute

Offered for the first time in 2012 in collaboration with CLIR and ARL, the aim of the Institute is to help research libraries "get a handle on e-science" by offering a combination of online and in-person sessions designed to help libraries learn how to manage institutional research and data. Twenty two institutions enrolled in the course, which kicked off in fall 2012 and completed in December 2012, culminating with a capstone event with seventy five attendees and four faculty members. The program was very well received, and DuraSpace intends to expand on the e-science courses offered in 2013 in a partnership with CLIR.

4 DuraSpace Projects

Fedora

In 2012, Fedora committers released version 3.6, containing a number of new features, including:

- An updated web services framework
- Support for low-level storage metadata
- Expanded Spring-based configuration
- Extensions to the REST API
- Experimental support for upstream authentication
- Deprecation of the legacy authentication module and the client-messaging library

During 2012, many members of the Fedora community, including both developers and stakeholders, expressed a desire to refresh the product's vision and to produce an evolutionary short- and mid-term development roadmap for the repository. The idea was that while Fedora's conceptual architecture was proven and still sound, the underlying technology needed to become more responsive to a wide range of current and emerging requirements, more performant and scalable, and capable of advancing in a more agile development framework. The realization was that this work would require considerably more effort and a different approach than is possible using our current model of volunteer developer contributions led and coordinated by the DuraSpace organization.

At the Open Repositories conference, OR2012, a group of Fedora stakeholders self-organized to plan informal discussions about the future of Fedora. With representation from some large institutions, major projects such as Hydra, Islandora, APTTrust, and eSciDoc, plus DuraSpace, the "Fedora Futures" group began planning a three year project to improve Fedora. Most importantly, a commitment was expressed to mobilize organized, sustained resources in the short term in order to scale up the development of Fedora. An interim technical team lead was hired by DuraSpace, a steering committee was formed, and nine institutions contributed significant incremental funds and in-kind developer resources to support these efforts.

DSpace

The DSpace project achieved a number of milestones in 2012:

- Held an inaugural DSpace Virtual Summit week for developers to brainstorm new features and plot out a roadmap for the year.
- Migrated the DSpace codebase to GitHub and simplified release numbering, opting to jump straight to "3.0" for the next release.
- Established the first DSpace Release Team, comprised of four members, to coordinate and plan the DSpace 3.0 release, one of the largest in recent years.
- Released DSpace 3.0 in November, adding several major enhancements to the DSpace platform: a rewritten, upgraded OAI-PMH interface, item-level versioning, authentication security and LDAP enhancements, advanced embargo functionality, search/browse enhancements, usage statistics improvements, and a mobile theme.

- In December, version 1.0 of the DSpace Replication Task Suite add-on was released, providing a variety of Curation Tasks geared towards DSpace backup & restore activities, and bringing these activities to the Admin User Interface. This version also provides direct integration to allow DSpace Administrators to backup and restore via DuraCloud. (<https://wiki.duraspace.org/display/DSPACE/ReplicationTaskSuite>)
- Added two new DSpace Committers in 2012.

In October and November, DuraSpace held a series of virtual community-wide discussions on the future of DSpace and what new features or improvements may be necessary.

(<http://www.duraspace.org/dspace-futures>). This became the start of a “DSpace Futures” series of initiatives that began early in 2013.

VIVO

In 2012, DuraSpace began discussions with leaders of the VIVO Project with the intent of exploring the feasibility of accepting VIVO as the first entry into a new DuraSpace Incubation Program. The goal of the incubation program is to mentor and support projects that wish to become part of the larger DuraSpace community by adopting best practices for open source projects and working towards a sustainable business model.

VIVO is an open community, an information model, and an open source semantic web application supporting the advancement of scholarship by integrating and sharing information about scholars, their activities and outputs at a single institution while supporting discovery of related work and expertise across a distributed network.

VIVO’s start-up costs include a projected 2.0 FTE by DuraSpace plus VIVO contracted staff to support their transition to DuraSpace, as well as non-personnel costs including operations, communications, travel, and professional services. Institutions currently engaged with VIVO will be contributing significant professional staff time through in-kind support.

In the last quarter of 2012, VIVO and DuraSpace announced the start of their working relationship, and VIVO began a sponsorship campaign with assistance from DuraSpace in the areas of governance, fund-raising, marketing, technical support, and strategic planning.

5 DuraSpace Services

DuraSpace continued to build its cloud based services, particularly DuraCloud, where the focus was on developing a more robust and simple archiving and preservation service. Over the course of 2012, DuraCloud achieved the following milestones:

- Simplified the content ingest process by providing a client side tool with a GUI interface, where users can easily load files straight from their desktop and keep those files in sync with their content stored in DuraCloud.
- Automated preservation-based services that run without user interaction, such as health checking files and auto replication of files across storage providers if more than one storage provider is enabled.
- Integrated with academic storage cloud provider SDSC (San Diego Supercomputer Center)
- Utilized university prescribed LDAP authentication mechanisms for logging into a DuraCloud account, such as Shibboleth.
- Created DuraCloud Basic and DuraCloud Enterprise offerings. The DuraCloud Basic architecture resulted in a significant cost reduction for users.

DuraSpace formed strategic partnerships with Internet 2, SDSC, and Chronopolis to increase market awareness of DuraCloud, and to bring additional value to our customers through product integrations with DuraCloud. DuraCloud also became the first community-based Netplus provider, being validated by the Internet2 organization as a trusted provider and with a standard service agreement and pricing of which all Internet2 members can take advantage. Internet2 has over 150 members in the US representing research universities, primarily from the IT and CIO departments of the university, a sector of academia where DuraCloud and DuraSpace has had little interaction.

San Diego Supercomputer Cloud and Chronopolis were two new service providers with which the organization integrated DuraCloud. Users could now choose to put their content in Amazon S3, Rackspace and/or SDSC and/or Chronopolis. SDSC is attractive to our community of users as it is the first academic-run cloud infrastructure available as a public service to the academic sector. Chronopolis is a preservation service which allows users to make three copies of content offline to unique geographic areas in a dark archive, complementing DuraCloud's online cloud based service.

In 2012 DuraSpace also completed work on a project funded by the Sloan Foundation to extend DuraCloud functionality for the benefit of the research community. The project resulted in a production prototype of the DuraCloud for Research application, which provides synchronization of research project data to DuraCloud, creation of Fedora metadata, also in the cloud, as well as integration with a Smithsonian Institution web service designed to manage and visualize the project data. DuraSpace is currently seeking partners to further the work of the project.

6 Conclusion

DuraSpace successfully achieved its primary 2012 goal of sustainability and increased community engagement: *transitioning to a more diversified revenue model consisting of services, sponsorship, and grant funding, and engaging the community to participate in the long term direction and strategy for both DSpace and Fedora project.*

Over the past three years, DuraSpace has been successful in adding new sponsors annually that provide financial support for the DSpace and Fedora open source projects. These projects that initially were fully grant funded now rely solely on the financial support of the community and are managed under the guidance and leadership of DuraSpace. The growth in sponsorship revenue, in tandem with an increase in service revenue due to new DuraCloud customers, resulted in over sixty percent of 2012 revenue coming from non-grant sources.

Initial grant funding provided by the Moore Foundation in 2006-2011 allowed the organization to invest in additional technology resources to support existing and new projects; grow community awareness through marketing; and devise realistic roadmaps to support the long-term growth of our projects and services. In addition, DuraSpace was able to develop strategic partnerships which exposed our technologies to new organizations within and outside of our current community. By investing grant funds in these areas, DuraSpace has been able to build a sustainable organization with a recurring revenue stream coming from diversified sources.

In technology, the organization focused on discussion and efforts directly with the community to devise the best long term plans best for DSpace and Fedora. Feedback strongly indicated a need for an increased effort for management of the software and technological investment. While the community is the projects' owners, DuraSpace is its stewards, and stakeholders from both communities formally established community-wide groups in order to develop a three-to-five year vision and roadmap, with DuraSpace putting the processes in place to achieve these goals.

Secondary initiatives within the DuraSpace organization were also realized: DuraSpace defined a clear set of service and support offerings and in 2012 was able to explore other projects to support within the community. DuraSpace successfully initiated such an offering with VIVO, to provide skills, administration and mentoring to assist in transitioning them from a grant-funded model to a community-resourced project.

Further initiatives included additional funding from the Moore Foundation to continue to build new features in DuraCloud, as well as establishing several strategic partnerships to help us expand the DuraCloud service by integrating more fully with other complementary software technologies and attracting a new audience of users. The operations of DuraSpace were also reorganized in order to be more transparent to the community in terms of how funds are allocated.

The DuraSpace community will continue to be the driving force behind our initiatives, in order for us to guide the community to advance their strategies and use for preserving and managing their digital content.

Appendix A

2012 DuraSpace Sponsors

Gold Sponsors (\$10,000)	Silver Sponsors (\$5,000)	Bronze Sponsors (\$2,500 or less)
Arizona State University	Georgia Institute of Technology	Brown University
Columbia University	Harvard University	Case Western Reserve University
Cornell University	Monash University	CLIR**
Duke University	Northwestern University	Creighton University
Emory University	Ohio State University	Durham University
Indiana University	Penn State	Florida State University
ICPSR*	Rice University	George Mason University
Johns Hopkins University	Smithsonian Institution	Georgetown University
Massachusetts Institute of Technology	University of Calgary	Imperial College London
North Carolina State University	University of California San Diego	Kansas State University
Stanford University	University of Cambridge	Lafayette College
Texas Digital Library	University of Edinburgh	Loughborough University
Tufts University	University of Guelph	Massey University
University of British Columbia	University of Hull	National Library of Medicine
University of Illinois	University of Kansas	New York University
University of Michigan	University of Maryland	Northeastern University
University of Pittsburgh	University of Miami	Purdue University
University of Texas Libraries	University of Minnesota	Rockefeller University
University of Toronto	University of New South Wales	State and University Library, Aarhus, Denmark
University of Virginia	University of Ottawa	Temple University
Virginia Tech	University of Prince Edward Island	University of Adelaide
	University of York	University of Arizona
	York University	University of Auckland
		University College Cork
		University of Connecticut
		University of Delaware
		University of Hawaii at Manoa
		University of Manitoba
		University of Massachusetts Amherst
		University of Missouri
		Université de Montréal
		University of New Brunswick
		University of Notre Dame
		University of Oxford
		University of Technology Sydney
		University of Tennessee
		Utrecht University
		Vrije University Amsterdam
		Washington State University Libraries
		Yale University
		Youngstown State University

*Interuniversity Consortium for Political and Social Research

** Council on Library and Information Resources

Appendix B

2012 DuraSpace Registered Service Providers
Enovation Solutions, LTD
VTLS, Inc.
The Longsight Group, LLC
AtMire
Open Repository (BioMed Central)
MediaShelf, LLC
CILEA
Discovery Garden
Argonet
Provider IT
Truman Technologies