Fedora Community Annual Report

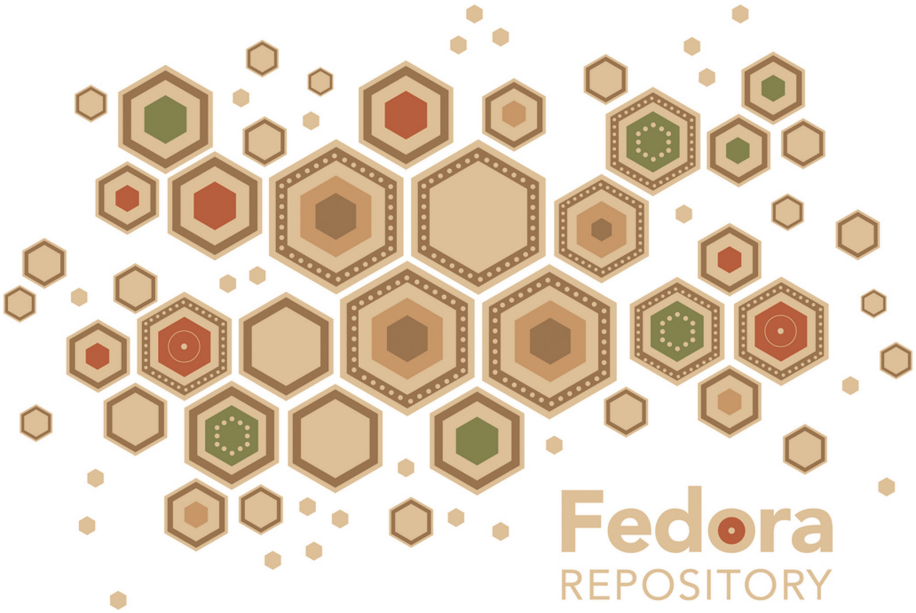
2017

Fedora REPOSITORY

DURASPACE™

TABLE OF CONTENTS

SUMMARY



Fedora has established itself as a mature, community-based, open source project, with strong membership support and active participation from a wide variety of stakeholders. 2017 was a year of steady growth and progress toward key priorities, along with a renewed focus on the long term vision and strategic plan.

The Fedora Leadership Group, made up of active representatives from member institutions, continues to increase its engagement in leading the community. This governance group met regularly via teleconference throughout the year and twice in person to make progress on key initiatives such as the code of conduct and forthcoming vision and strategic plan. As a community-based project, Fedora depends on the Leadership Group to represent the needs of stakeholder institutions around the world.

The technical roadmap for 2017 focused on stability and standardization. As a production repository Fedora needs to be stable, so we have slowed down our release process and committed to no more than one major release per year (with minor updates to be released as needed). At the same time, we have focused the bulk of our technical efforts on drafting and implementing an API specification, which will standardize the way clients interact with Fedora. A draft specification was published in 2017 with plans to complete this effort in Spring of 2018.

Building and sustaining a strong community is one of our central goals. To this end, we continue to offer training workshops and camps throughout the year, along with regional user group meetings. We held fifteen workshops for over 300 participants in 2017, as well as two full training camps, one of which was done in partnership with the Samvera community. User group meetings were held in Washington, DC, Texas, and Illinois, and a new German-speaking group held their inaugural meeting in Hamburg, Germany.

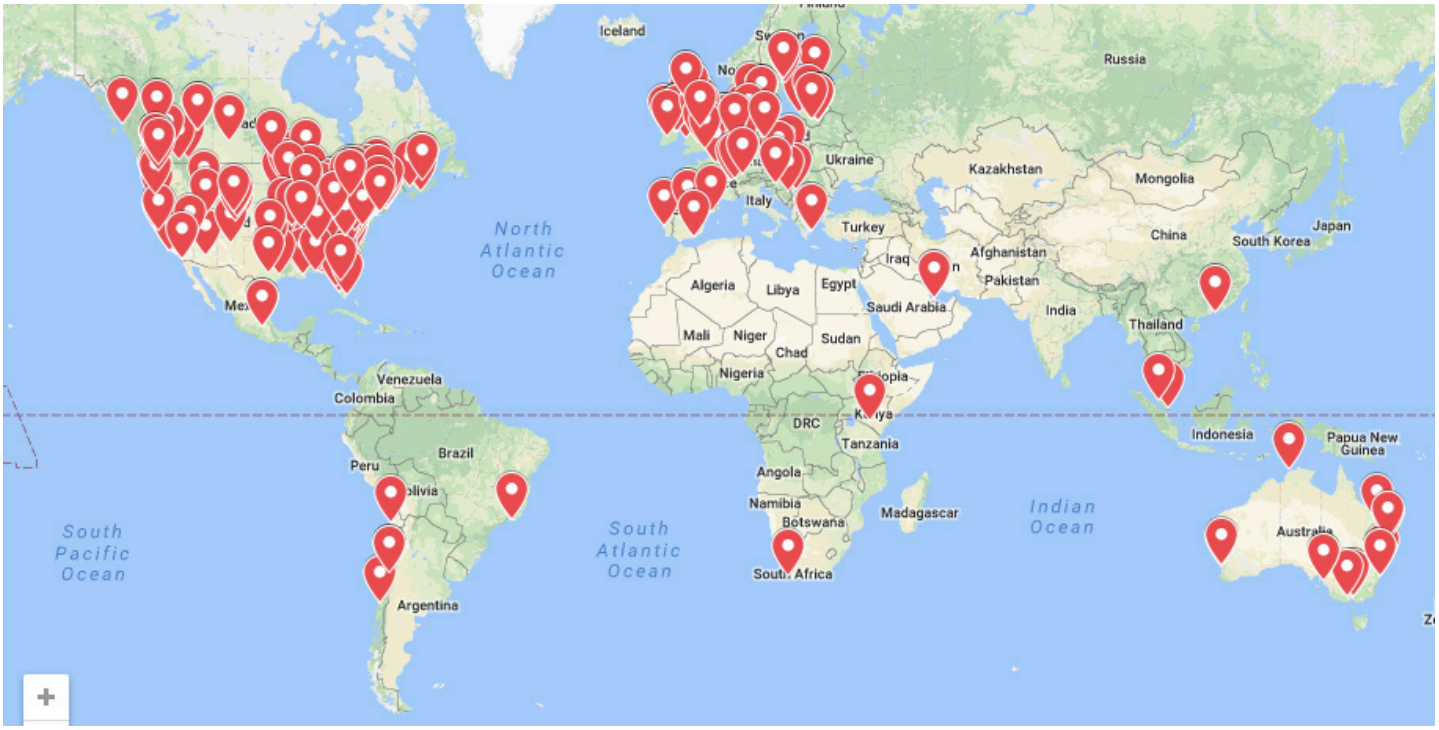
Building off the steady progress of 2017 we plan to realize a number of key priorities in 2018, including the publication and implementation of the API specification, alignment around a long-term vision and strategic plan, and continued growth and diversification of project members, committers, and Leadership Group representatives.

MEMBERSHIP

The list of DuraSpace members supporting Fedora continued to grow in 2017. We welcomed the University of Bern Library, the University of Michigan Medical School, and the University of Tennessee at Knoxville aboard as new members, bringing the total up to 74. The full list of members includes:

Amherst College
Arizona State University Libraries
Brown University Library
Carnegie Mellon University
Case Western Reserve University Libraries
Charles Darwin University
Columbia University Library
Denmark's Electronic Research Library
Docuteam GmbH
Duke University Libraries
Durham University
Emory University
George Washington University
Ghent University Library
ICPSR
Indiana University
Johns Hopkins University Libraries
La Trobe University
Lafayette College
London School of Economics & Political Science
LYRASIS
Macquarie University
Massachusetts Institute of Technology
McMaster University
National Library of Medicine
National Research Council of Canada
Northeastern University Libraries
Northwestern University Libraries
The Ohio State University Libraries
Oregon State University
Pennsylvania State University
Princeton University
RMIT
Rutgers University Libraries
Smithsonian Institution, Office of Research Information Services
Stanford University
The Art Institute of Chicago
Tufts University
University of Alberta
University of Bern Library
University of California, Los Angeles
University of California, San Diego
University of California, Santa Barbara
University of Cincinnati
University of Connecticut Libraries
University of Denver
University of Houston
University of Hull
University of Lausanne
University of Manitoba
University of Maryland
University of Michigan
University of Michigan Medical School
University of New South Wales
University of North Carolina at Chapel Hill
University of Notre Dame
University of Oklahoma Libraries
University of Oregon
University of Oxford
University of Pittsburgh
University of Prince Edward Island
University of Rochester Libraries
University of Tennessee at Knoxville
University of Texas Libraries Austin
University of the Sunshine Coast
University of Toronto
University of Virginia
University of Wisconsin
University of York
Uppsala University Library
Vassar College
Villanova University
Yale University
York University

MAP OF FEDORA INSTALLATIONS WORLDWIDE, MARCH 2018



The Fedora project receives support not just from DuraSpace members, but from the broader community. Fedora has been adopted by over 400 institutions around the world.

COMMUNITY PROFILES

University of Michigan Medical School

Allen Flynn, Research Analyst and Technology Lead at the University of Michigan Medical School, describes Fedora 4 development of the Knowledge Grid, an open repository of digital knowledge objects aimed at keeping health information accessible and safe at the University of Michigan Medical School and beyond.

- **Why Fedora 4?**

We need a digital repository to store, protect, curate, and manage encoded digital knowledge artifacts for health at scale. In addition, each artifact in the repository needs to be described with a rich and growing set of metadata. Fedora 4 offered us the combination of digital storage and linked data support that we needed to meet our objectives at scale.

- **What are the strategic priorities that Fedora 4 helped to support?**

There are two strategic priorities of the highest order. First, the platform we are building is to support global sharing of computer-processable knowledge artifacts about health. The Fedora 4 API supports this by allowing us build applications that provide end users with global access to these resources automatically and on-demand. Second, the platform we are

building needs to preserve the knowledge artifacts it contains for a very long time. Fedora 4 offers mechanisms and capabilities to address the priority of digital preservation.

- How is Fedora 4 working in production?

For the Knowledge Grid program, Fedora 4, and its built-in integrations with Fuseki and SOLR, allow us to focus on developing the digital library application that is of interest to us while relying on the support of Fedora 4 and associated systems for search and discovery, reporting, and content management.

- What deployment advice would you give others in the community?

The number one piece of advice we have is to engage the community. We have and continue to receive outstanding help and guidance, and we've had the opportunity to learn and shape the future of Fedora.

Johns Hopkins University, Sheridan Libraries

Sayeed Choudhury, Associate Dean for Research Data Management and Hodson Director of the Digital Research and Curation Center (DRCC) at the Sheridan Libraries of Johns Hopkins University, describes the role of Fedora as both an institutional repository and data archive with native linked data capabilities.

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- What is your role with Fedora at your institution?

I am the Associate Dean for Research Data Management who manages a new data management directorate that includes the DRCC infrastructure group, the library applications group and data services including data management and GIS. Fedora 4 is at the heart of many of these functions at Sheridan Libraries now and in the future.

As DRCC Director I lead a team that is actively migrating content from DSpace to Fedora 4 as part of our work towards developing infrastructure to preserve and provide access to a range of both converted digital content in an efficient manner. We also curate content that is "born digital", such as large-scale scientific datasets. We see Fedora 4 as solution for both institutional repository functionality, and as a foundation for a rich data archive especially since Fedora 4 provides native linked data functionality.

- Why did you decide on Fedora?

The fact that Fedora 4 has a native linked data platform was very appealing. Using Fedora 4's native APIs and the extended capabilities through the API-X project (for which we have an IMLS grant) allow us to adopt the same platform for institutional repository and data archive requirements. These API-X extensions of Fedora's core feature set are particularly promising since they map the many and varied domain models currently in use by research communities onto Fedora's semantic-web-based data model and interface. This mapping reinforces the approach of moving preservation to researchers' existing environments and workflows.

- What strategic organizational or institutional goals did Fedora help you meet?

In the past our library and the research library community have often focused on creating

"one-offs"— deep customized collections that are connected to an interface as a showcase for specialized content. This approach is great if they can be generalized and sustained, but this has proven challenging, particularly at scale. Leveraging the Fedora 4 fundamental extensible nature gives us the foundation to create mix and match default services that are available to everybody without developing specific requirements for individual collections. Given the scale and complexity of research data, it is becoming critical that we develop ways to use common infrastructure to the extent possible.

GOVERNANCE, FINANCE, AND EXPENDITURES

The Fedora Leadership Group is made up of representatives from institutions that contribute funding and/or in-kind effort to the project. The Leadership Group approves the overall priorities and strategic direction of the project by approving the annual budget and product roadmap, nominating and electing Steering Group members, voting on key decisions presented by the Steering Group, and helping to raise funds and secure other resources on behalf of Fedora. The Leadership Group meets virtually once per month and twice annually in person.

The Fedora Steering Group is an elected body of nine representatives voted in from the Leadership Group. The Steering Group provides project oversight and ensures that the priorities of the Leadership Group and members are met, by providing guidance to the Product Manager and Technical Lead, with input on their annual performance reviews, recommending annual budget allocations, and presenting key decisions to the Leadership Group for discussion and approval. The Steering Group meets virtually once per month and meets in person twice annually as part of the larger Leadership Group.

The 2017 membership campaign set of goal of raising $580,000 to fund the project, including staff, travel, marketing and communication, infrastructure, and key strategic priorities as identified and voted on by the Leadership Group. We concluded the membership drive with $562,300 in funding, which is over 96% of our goal. The detailed financial breakdown is below:

ACCOUNTS

	Income ($)	Expenditure ($)
Membership Revenue	562,300	
Service Provider Revenue	83.34	
Staff		374,832.93
Contractors		19,902.60
Marketing and Communication		4,749.35
Travel		51,983.26
Office Expenses		2,515.53
Infrastructure and Support		64,170.52
Hardware Depreciation		665.43
Total	**562,383.34**	**518,819.62**

1 January 2017 - 31 December 2017 Summary:

Net income from above: $43,563.72
Net Fedora Camp revenue: $5,618.78
Cash balance forward from 2016: $290,086.91

Cash balance 31 December 2017: $339,269.41

PROGRESS ON KEY INITIATIVES

API SPECIFICATION

The Fedora community is working to establish a clearly defined specification for the core Fedora services. This specification details the exact services and interactions required for a server implementation to be verified as "doing Fedora". A charter for the specification effort was published in 2017, and an editorial team was established. The team members include:

- Ben Armintor, Columbia University
- Esmé Cowles, Princeton University
- Danny Lamb, Islandora Foundation
- Simeon Warner, Cornell University
- Andrew Woods, DuraSpace

As described in the charter, this specification is designed to:

1. Define the characteristics and expectations of how clients interact with Fedora implementations
2. Define such interactions such that an implementation's conformance is testable
3. Enable interoperability by striving to minimize the need for modifications to client applications in order to work with different implementations of the Fedora API specification

The core HTTP and notification services defined in this specification are listed, along with the associated standards from which they are derived:

1. Resource Management (Linked Data Platform)
2. Resource Versioning (Memento)
3. Resource Authorization (Web Access Controls)
4. Notifications (Activity Streams)
5. Extended Binary Resource Operations
6. Fixity (HTTP headers)
7. Referenced Content via message/external-body Content-Type

A Candidate Recommendation of the Fedora API Specification was published for public review in November 2017. The public comment period will be followed by the release of the full Recommendation, which we expect to be published as early as April, 2018.

Registered Service Providers

A healthy network of service providers is essential to the long term growth and sustainability of the Fedora project. To this end, we are pleased to welcome aboard Cottage Labs as the first official DuraSpace Registered Service Provider offering Fedora services. The Islandora and Samvera communities also maintain separate lists of service providers for each of their projects. We hope to continue adding service providers to the program in 2018.

2018 Initiatives
Alternate Implementations

No single software application can support every use case, and Fedora is no exception. However, the emerging API specification will allow us to decouple the services Fedora provides from any particular back-end implementation. This is turn will allow the community to explore alternative back-end implementations that serve different needs, all of which would be exposed through the same Fedora API and therefore be invisible from a client perspective. Several such implementations are already under development, and we plan to support this

development in 2018.

Strategy and Vision

The Fedora Leadership Group, in consultation with the Product Manager and Technical Lead, is responsible for approving the strategic direction of the project in line with the vision. While this vision was clearer in the lead up to the development and release of Fedora 4, it is time to re-evaluate and re-articulate the Fedora vision and develop a corresponding strategic plan. To this end, a sub-group of Fedora Leaders has been working on a vision and strategic plan, and the full Fedora Leaders group met in December of 2017 to review and contribute to this process. The sub-group will incorporate feedback from Fedora Leaders and produce a draft vision and strategic plan to be approved by the Leadership Group and shared with the broader Fedora community for comments and discussion in early 2018. Once finalized, the vision and strategic plan will provide concrete guidelines for Fedora in terms of product development, marketing and outreach, community, and governance.

Events

The Fedora community continues to engage in a variety of events each year, including user group meetings, workshops, training camps, and participation in Islandora and Samvera community events. User groups in the Washington, DC area, the Midwest, and the South Central states each held meetings in 2017, while a new German-speaking user group held their inaugural meeting in Hamburg in December. These groups provide great opportunities for regional Fedora users to meet and share their work, find collaborators, and grow the local Fedora community.

Attendees at Fedora Camp in Austin, Texas, October 2017

Training events can be broken into two categories: workshops and camps. Fedora workshops are typically half or full day sessions held alongside other events such as conferences and user group meetings. Workshops are typically introductory in nature, but the particular topics covered can vary based on the anticipated interests of the audience. We held 15 workshops attended by over 300 people in 2017. Fedora Camps are 3-5 day in-depth training events that take place twice per year. Camps provide hands-on, deep dive training coupled with opportunities to ask questions and get answers from experts in the community. We held Fedora Camps in Austin, Texas and Oxford, UK in 2017, the latter of which was a combined Fedora and Samvera camp.

Planned Training and Events for 2018

A Fedora Camp will take place at the NASA Goddard Space Flight Library in May of 2018, and we hope to schedule another combined Fedora and Samvera Camp for the Fall. Regional user groups typically meet once or twice each year; to find your regional group (or to start a new group) please see the user group section of the project wiki. Half and full day workshops will continue to be scheduled throughout the year at a variety of conferences and events.

Contributions to the Annual Report

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