

TECHNICAL SPECIFICATIONS: FEDORA

Description: Fedora is a robust, modular, open source repository system for the management and dissemination of digital content. It is especially suited for digital libraries and archives, both for access and preservation. It is also used to provide specialized access to very large and complex digital collections of historic and cultural materials as well as scientific data. Fedora has a worldwide installed user base that includes academic and cultural heritage organizations, universities, research institutions, university libraries, national libraries, and government agencies.

History: Fedora was originally developed at Cornell University in 1998 based on the Flexible Extensible Digital Object Repository Architecture (Fedora) paper written by Sandy Payette and Carl Lagoze. Fedora became a DuraSpace project in 2009 when the Fedora Commons and DSpace organizations merged to form DuraSpace.

Cost: Open source software, no charge. Fedora is distributed under the terms of the Apache 2.0 open source license.

Use case highlight: Fedora is used by libraries, archives, museums, and research organizations all over the world to manage, preserve, and provide access to a wide variety of digital content. Fedora is flexible enough to support both simple and complex use cases, and can be integrated with many other applications and services.

Architectural overview

Fedora's modular architecture is built on the principle that interoperability and extensibility is best achieved by providing a limited set of stable, standards-based repository services and common patterns for integrating with other best-practice systems and applications. These services are provided via RESTful APIs in accordance with modern web standards. Fedora provides a foundation upon which many types of repository frameworks can be built, including the popular Hydra and Islandora projects.

Service provider

Truman Technologies is a registered service provider offering analysis, consulting, hosting, installation/configuration and migration services for Fedora users: <http://duraspace.org/service-providers/>

Technical aspects

Operating System: Written in Java, tested under Linux, Windows, and Mac OSX

License: Apache 2.0

Release version: 4.6.0, <http://fedorarepository.org/download>

Documentation: <https://wiki.duraspace.org/display/FF/Documentation>

Other prerequisite software: JJava 8, Servlet 3.0 container (e.g. Tomcat 7+, Jetty 9+)

Key features

Flexible Architecture: Designed as the foundation of a repository framework, Fedora integrates with other applications and services (including Hydra and Islandora) using well-defined patterns.

Semantic Web: Fedora is a semantic web application. Data and metadata in Fedora can be modeled using any ontologies and vocabularies. As a linked data server, Fedora provides content in RDF by default.

Advanced Search: Content in Fedora can be easily indexed and searched using best-practice search applications such as Apache Solr. Solr is an enterprise search server providing fault-tolerant, reliable, scalable, faceted search functionality.

Advanced Query: Content in Fedora can be easily indexed as RDF triples using most triplestore applications. These triples can then be queried using the SPARQL query language.

Unlimited File Types: Fedora can store any type of file.

Content Modeling: Fedora support both simple and complex content modeling use cases by leveraging the flexibility of RDF.
Security: Fedora can integrate with existing authentication systems such as LDAP and Shibboleth.

Access Controls: Fedora can control access to content via a pluggable, standards-based authorization framework.

Disaster Recovery: Content in Fedora can be exported as RDF and imported to recovery from disaster.

Configurable Database: Fedora supports several relational databases for metadata storage, including MySQL and PostgreSQL.
Configurable File Storage: Files in Fedora can be stored either using a local filesystem or a cloud-based solution, such as Amazon S3.

Data Integrity: Fedora can calculate, store, and verify checksums for all files managed by the application.

Scalability: Fedora can scale to support millions of objects and files, with no known limits on file sizes. practices for access, ingest, and export.

Software development

Duraspace hosts a group of leading-edge open technology projects characterized by thriving, consensus-driven, developer communities, including governance and membership, that strive to produce high quality products that insure sophisticated access and management of durable digital information.

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