

Introduction to Fedora 6.0

Overview

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Learning Outcomes

Understand what Fedora can do for you

Understand the key capabilities of the software

Gain hands-on experience with Fedora





Stores, preserves, and provides access to digital objects

Supports flexible content models for objects

Supports semantic relationships between objects

Supports millions of objects, both large and small

Interoperates with other applications and services

Why use Fedora?

Fedora is **flexible**: it can handle both simple and complex use cases

Content in Fedora is **durable**: Fedora supports long-term preservation

Fedora powers successful digital repository and DAM applications

Fedora is **standards-based**

Fedora is backed by a **thriving community**

What's new with Fedora 6.0?

Enhanced digital preservation capabilities

Robust migration tooling

Built-in simple search

Improved performance and scale

Metrics collection and reporting

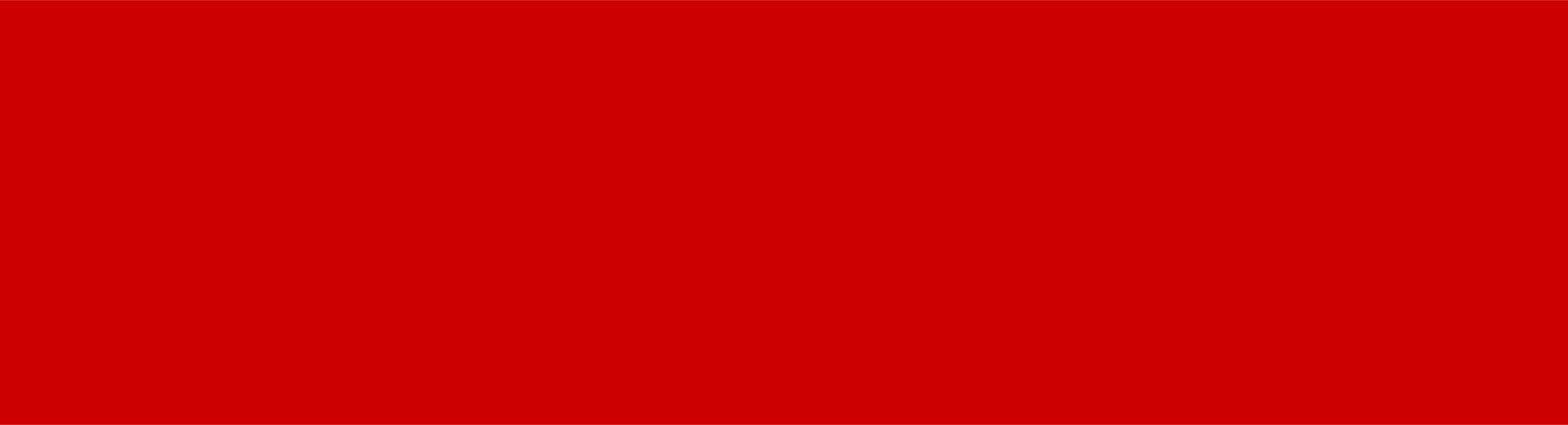
Fedora Front-Ends

Fedora is *middleware*

You can build a custom framework, or join a broader community:



Fedora Examples



Institutional Repository

The screenshot shows the GW ScholarSpace website. At the top, there is a dark blue header with the GW logo, the text "Libraries GW ScholarSpace", and navigation links for "Home", "About", "Help", and "Contact". A search bar is located on the right side of the header. Below the header is a large banner area with a dark background on the left and a lighter background on the right. The left side of the banner contains the text: "Join the nexus of research at GW", "Preserve your work", "Raise the impact of your research", and "Browse the scholarly works of The George Washington University". The right side of the banner features a "Share Your Work" button and a "Terms of Use" link. Below the banner, there are two tabs: "Featured Works" and "Recently Uploaded". The "Featured Works" tab is active, showing two featured works. The first is "The George Washington... GWU Pre-Law Student Association Journal", with a sub-description "Pre-Law, Student works, Undergraduate works". The second is "Privileged Place: Race,...", with sub-descriptions "Squires, Gregory", "Other", and "Public policy". To the right of the featured works is a "Featured Researcher" section, which includes a link to "View other featured researchers" and a banner for the "PROJECT ON MIDDLE EAST POLITICAL SCIENCE". Below the banner is a paragraph describing the project: "The Project on Middle East Political Science, POMEPS, is a collaborative network designed to enhance the broader Middle East's political science field and its engagement with the broader academic discipline, public policy, and the public sphere. POMEPS seeks to shape innovative new approaches to the political science of the region, support the field's publication in leading academic journals, and ultimately build the number of tenured political scientists specializing on the Middle East. It also aims to increase their contribution to the public foreign policy debate and to the policy-making process, in order to allow their expertise to have more of an impact on vital decisions about the Middle East." Below this paragraph is a link to "Browse the POMEPS Collection".

GW Libraries GW ScholarSpace

Home About Help Contact

Enter search terms All ▾

Join the nexus of research at GW
Preserve your work
Raise the impact of your research
Browse the scholarly works of The George Washington University

Share Your Work
Terms of Use

Featured Works Recently Uploaded

Featured Works

The George Washington...
GWU Pre-Law Student Association
Journal
Pre-Law, Student works, Undergraduate works

Privileged Place: Race,...
Squires, Gregory
Other
Public policy

Featured Researcher
View other featured researchers

PROJECT ON MIDDLE EAST POLITICAL SCIENCE

The Project on Middle East Political Science, POMEPS, is a collaborative network designed to enhance the broader Middle East's political science field and its engagement with the broader academic discipline, public policy, and the public sphere. POMEPS seeks to shape innovative new approaches to the political science of the region, support the field's publication in leading academic journals, and ultimately build the number of tenured political scientists specializing on the Middle East. It also aims to increase their contribution to the public foreign policy debate and to the policy-making process, in order to allow their expertise to have more of an impact on vital decisions about the Middle East.

Browse the POMEPS Collection

<https://scholarspace.library.gwu.edu/>

Research Data

The screenshot shows the homepage of the Deep Blue Data repository. At the top, there is a dark blue navigation bar with the University of Michigan Library logo and the text "Deep Blue Data". To the right of the logo are links for "About", "Help", "Contact", and "Login". Below the navigation bar is a light blue search bar with the placeholder text "Enter search terms" and a "Go" button. The main content area has a dark blue background with a starry pattern. It features a central text block: "Deep Blue Data is a repository offered by the University of Michigan Library that provides access and preservation services for digital research data that were developed or used in the support of research activities at U-M." To the right of this text are two buttons: "Browse" and "Deposit Your Work". Below this is a "Featured Works" section with a light gray background. It has two tabs: "Featured Works" (selected) and "Recently Uploaded". Under the "Featured Works" tab, there is a card for "Retinal fundus images for glaucoma analysis: the RIGA dataset". The card includes a blue cube icon, the title, the depositor "sborda@umich.edu", and a list of keywords: "Medical imaging, Optic cup, Image processing, Optic disc, Glaucoma, Optic nerve head, Image segmentation, Fundus images, Automated glaucoma screening system". Below this card, the start of another card for "Neighborhood Effects: Food Environment" is visible.

M LIBRARY | Deep Blue Data

About Help Contact Login

Enter search terms **Go**

Deep Blue Data is a repository offered by the University of Michigan Library that provides access and preservation services for digital research data that were developed or used in the support of research activities at U-M.

Browse

Deposit Your Work

Featured Works

Featured Works Recently Uploaded

 [Retinal fundus images for glaucoma analysis: the RIGA dataset](#)
Depositor: sborda@umich.edu
Keywords: [Medical imaging](#), [Optic cup](#), [Image processing](#), [Optic disc](#), [Glaucoma](#), [Optic nerve head](#), [Image segmentation](#), [Fundus images](#), [Automated glaucoma screening system](#)

 [Neighborhood Effects: Food Environment](#)

<https://deepblue.lib.umich.edu/data>

Newspapers

UNIVERSITY OF MARYLAND

UNIVERSITY LIBRARIES

LIBRARIES & SPACES | FIND & CITE | SERVICES | I AM A... | HELP | ABOUT

Today: McKeldin Open 24 hours - Campus ID required 11 pm - 8 am

Hours | My Accounts | Ask Us! | Search UMD Libraries website

UMD Student Newspapers

Home / UMD Student Newspapers

UMD Student Newspapers

Search

Browse

Giving

How to Give

Donor Roll

About

University Archives Home

Search UMD Student Newspapers, 1910-2016

Search keywords, names, article titles, and more

Search

Welcome to the UMD Student Newspapers database, a collaboration between the University of Maryland Archives and the UMD Libraries' Digital Systems and Stewardship division to digitize and make accessible the major student newspapers produced on the College Park campus.

At present, the UMD Student Newspapers database consists of issues of:

- *The Diamondback* and its seven predecessor papers, January 1, 1910 - December 14, 1998
- *Black Explosion*, May 1970 - December 2015/January 2016

For more detailed information about this project, search strategies, and special features of the database, please visit the [About](#) page.

To access current issues of *The Diamondback*, visit <http://www.dbknews.com/>.

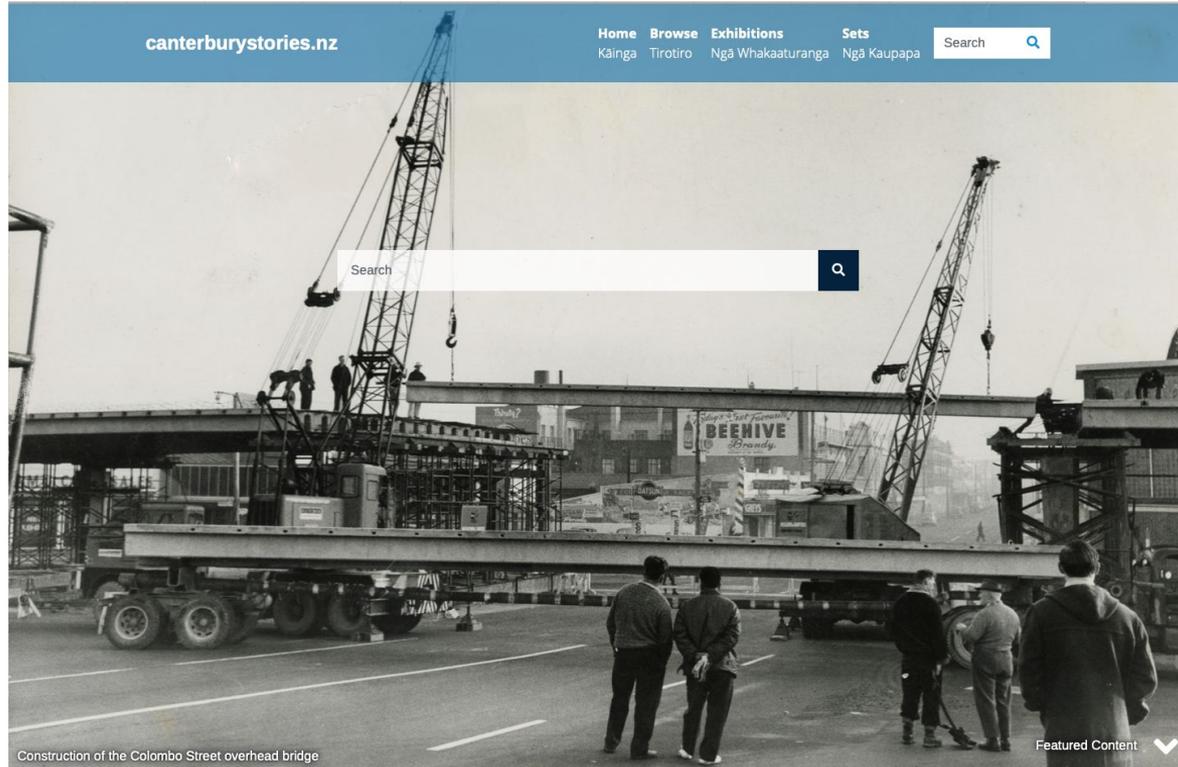
Thank you to the generous donors who contributed to our Launch campaign to finish digitizing *The Diamondback*. Continue to check the [Launch page](#) for project updates.

It's never too late to make a donation. [Learn more about making a gift >>](#)

Last update: Feb 11, 2019

<https://www.lib.umd.edu/univarchives/student-newspapers>

Special Collections



<https://canterburystories.nz>

Fundamental Concepts



Web Resources

Everything is a **web resource with an identifier (URI)**

- Container (metadata) resource
- Binary (file) resource

Resources can have properties expressed as **RDF triples**

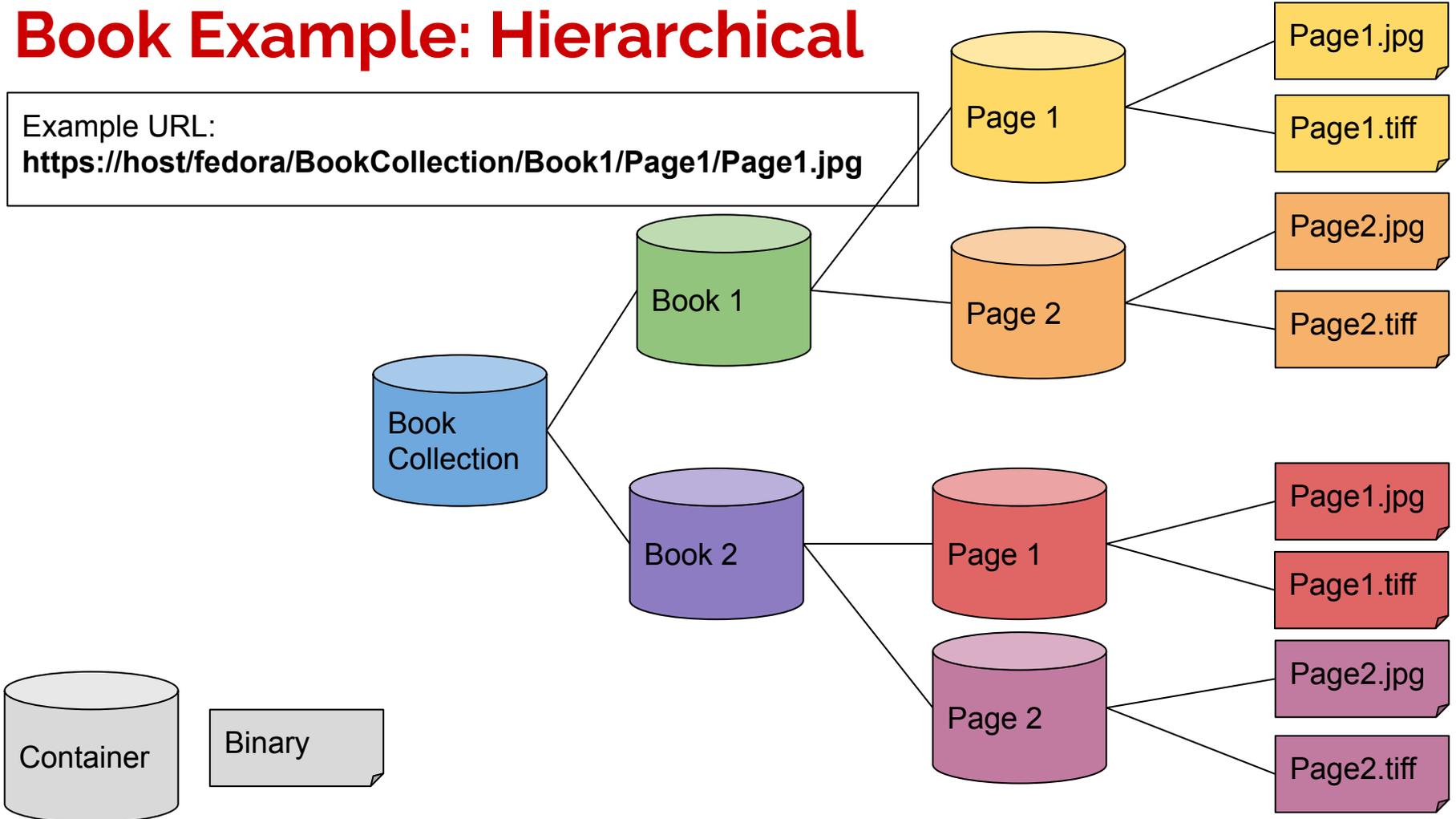
Resources can **contain** other resources

- Containers or
- Binaries

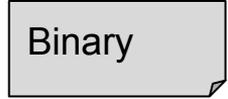
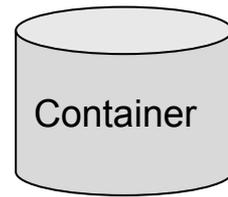


Book Example: Hierarchical

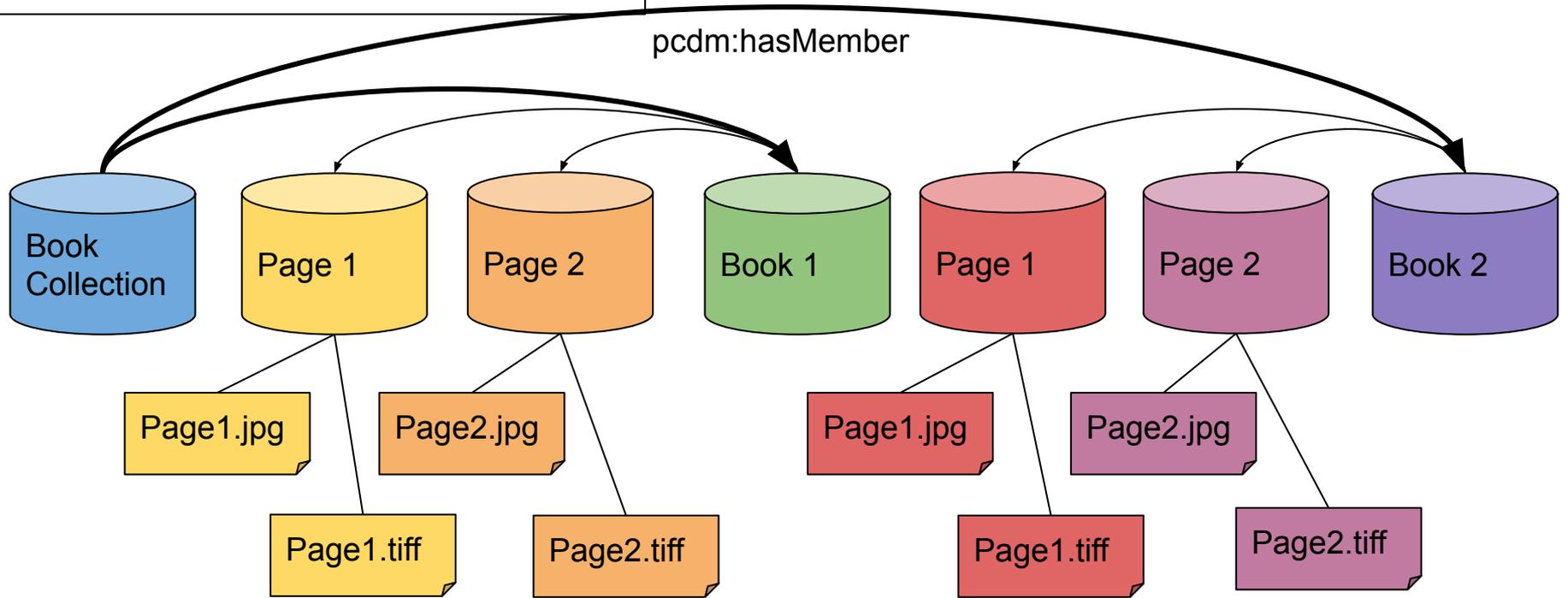
Example URL:
<https://host/fedora/BookCollection/Book1/Page1/Page1.jpg>



Book Example: Flat



Example URL:
<https://host/fedora/Page1/Page1.jpg>



RDF Properties

Fedora 4 Home Transactions ▾

http://localhost:8080/fcrepo/rest/Page1/Page1.jpg

[Home](#) / [Page1](#) / [Page1.jpg](#)

Created at

2018-05-07T14:50:42.13Z by fedoraAdmin

Last Modified at

2018-05-07T14:50:42.13Z by fedoraAdmin

Children 0

Properties

ebucore: **filename**
IMG_1328.JPG

ebucore: **hasMimeType**
image/jpeg

fedora: **created**
2018-05-07T14:50:42.13Z

fedora: **createdBy**
fedoraAdmin

fedora: **hasFixityService**
<http://localhost:8080/fcrepo/rest/Page1/Page1.jpg/fcr:fixity>

fedora: **hasParent**
<http://localhost:8080/fcrepo/rest/Page1>

fedora: **lastModified**
2018-05-07T14:50:42.13Z

fedora: **lastModifiedBy**
fedoraAdmin

Download Content

Fixity

Update Content

File

Choose File No file chosen

Update

Update Properties

```
PREFIX premis:
<http://www.loc.gov/premis/rdf/v1#
>
PREFIX test: <info:fedora/test/>
PREFIX rdfs:
<http://www.w3.org/2000/01/rdf-
schema#>
PREFIX xsi:
<http://www.w3.org/2001/XMLSchema
```

Standards

Fedora API Specification

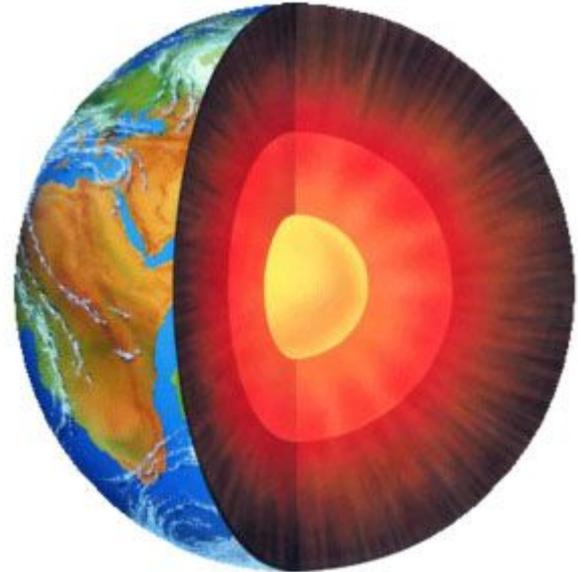
- Focus on **existing standards**
- Fewer customizations to maintain
- Opportunities to participate in **related communities**

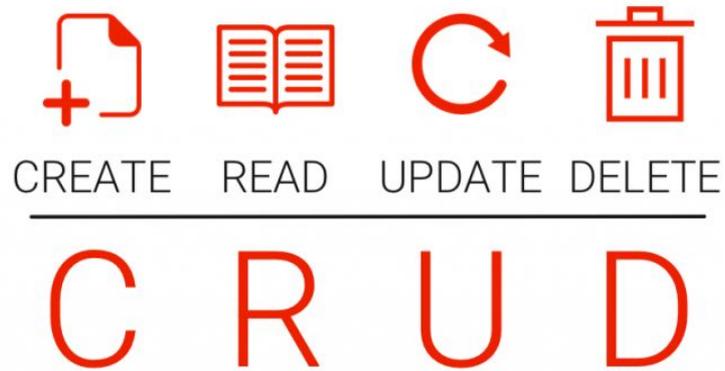
Core Features



Core Services and Standards

1. **Create/Read/Update/Delete** - Linked Data Platform
2. **Versioning** - Memento
3. **Authorization** - WebAC
4. **Fixity** - Digest / Want-Digest
5. **Simple Search**
6. **Messaging** - Activity Streams 2.0





Standards-based pattern
for **creating and managing**
resources

Basic tools for **modeling**
content

Applied Resource Management (CRUD)

Our primary way of managing Fedora resources

- Interact with resources via:
 - HTML Interface for browsers (abridged/simplified)
 - HTTP Client (most comprehensive)
 - `curl` is popular on the command line
 - Every relevant programming language has some sort of http client library

Hands on!

[Claim a sandbox instance](#)

Navigate to your sandbox instance

- username: fedoraAdmin
- password: fedoraAdmin

HTML Interface Cheatsheet

The screenshot shows the Fedora HTML interface for a resource. Annotations with arrows point to various parts of the page:

- Resource URI:** Points to the URL `http://localhost:8080/fcrepo/rest/basic/collection` in the breadcrumb.
- Slug:** Points to the `basic` part of the breadcrumb.
- POST:** Points to the `Add` button in the "Create New Child Resource" form.
- PATCH:** Points to the `Update` button in the "Update Properties" form.
- DELETE:** Points to the `Delete` button in the "Delete Resource" section.

The interface includes a navigation bar with "Fedora Home Transactions", a breadcrumb "Home / basic / collection", and a "GET" label in a teal box. The main content area shows metadata for a resource, including "Created at", "Last Modified at", and "Children". A "Properties" section lists various identifiers and their values. Below this are sections for "Other Resources", "Create New Child Resource" (with a form for Type, Identifier, and RDF), "Update Properties" (with a form for PREFIX, test, memento, rdfs, and webac), "Versions" (with "Create Version" and "View Versions" buttons), and "Delete Resource" (with a "Delete" button).

<https://wiki.lyrasis.org/display/FEDORA6x/RESTful+HTTP+API>

Step 1a: Resource Creation (POST)

1. Go to `http://ip.address:8080/fcrepo/rest`
2. In “**Type**” select field choose “**basic container**” (default)
3. In “**Identifier**” text field enter “**image-collection**”
4. Press “**add**” button

The screenshot shows the REST API interface for creating a new child resource. The URL is `http://localhost:8080/fcrepo/rest/`. The interface includes a navigation bar with "Home" and "Transactions" links. Below the URL, there are fields for "Created at", "Last Modified at", and "Children". A "Properties" section is visible with a plus sign. The main form area is titled "Create New Child Resource" and contains a "Type" dropdown menu set to "basic container", an "Identifier" text field containing "image-collection", and an "RDF (turtle)" text area containing the following content: `<a <http://purl.org/dc/dmitype/Collection>`. An "Add" button is located at the bottom right of the form.

```
$ curl -i -X POST -ufedoraAdmin:fedoraAdmin -H "Slug: image-collection"
http://ip.address:8080/fcrepo/rest
```

Step 1b: Resource Creation (POST)

1. You will be redirected to `http://ip.address:8080/fcrepo/rest/image-collection/`
2. In **“Type”** select field choose **“basic container”** (default)
3. In **“Identifier”** text field enter **“andromeda-galaxy”**
4. Press **“add”** button

The screenshot shows the Fedora REST API interface for creating a new child resource. The URL is `http://localhost:8080/fcrepo/rest/image-collection`. The page displays the following information:

- Created at:** 2019-08-21T09:57:28.345Z by fedoraAdmin
- Last Modified at:** 2019-08-21T09:57:28.345Z by fedoraAdmin
- Children:** 0

The **Properties** section shows the following data:

- fedora:created:** 2019-08-21T09:57:28.345Z
- fedora:createdBy:** fedoraAdmin
- fedora:lastModified:** 2019-08-21T09:57:28.345Z
- fedora:lastModifiedBy:** fedoraAdmin
- rdf:type:** <http://fedora.info/definitions/v4/repository#Container>, <http://fedora.info/definitions/v4/repository#Resource>, <http://www.w3.org/ns/ldp#BasicContainer>, <http://www.w3.org/ns/ldp#Container>, <http://www.w3.org/ns/ldp#RDFSource>

The **Create New Child Resource** form includes:

- Type:** A dropdown menu with "basic container" selected.
- Identifier:** A text input field containing "andromeda-galaxy".
- RDF (turtle):** A text area containing the following RDF snippet:

```
<> a <http://purl.org/dc/dcmitype/Collection>
```

```
$ curl -i -X POST -ufedoraAdmin:fedoraAdmin -H "Slug: andromeda-galaxy"
http://ip.address:8080/fcrepo/rest/image-collection
```

Step 2: Resource Retrieval (GET)

1. Every time you got redirected after creating a Container you were using GET.
2. Retrieval is accessed directly via the path that defines a resource and contains user and some server managed RDF triples.

The screenshot displays the Fedora REST API interface for a resource. At the top, there is a navigation bar with 'Fedora', 'Home', and 'Transactions'. The main heading is 'http://localhost:8080/fcrepo/rest/image-collection/andromeda-galaxy'. Below this, there is a breadcrumb trail: 'Home / image-collection / andromeda-galaxy'. The resource details are as follows:

- Created at:** 2019-08-21T09:58:16.215Z by fedoraAdmin
- Last Modified at:** 2019-08-21T09:58:16.215Z by fedoraAdmin
- Children:** 0

The 'Properties' section lists the following:

- fedora:created:** 2019-08-21T09:58:16.215Z
- fedora:createdBy:** fedoraAdmin
- fedora:lastModified:** 2019-08-21T09:58:16.215Z
- fedora:lastModifiedBy:** fedoraAdmin
- rdf:type:** <http://fedora.info/definitions/v4/repository#Container>, <http://fedora.info/definitions/v4/repository#Resource>, <http://www.w3.org/ns/ldp#BasicContainer>, <http://www.w3.org/ns/ldp#Container>, <http://www.w3.org/ns/ldp#RDFSource>

On the right side, there is a 'Create New Child Resource' section with a 'Type' dropdown menu set to 'basic container', an 'Identifier' field with '(auto-generated identifier)', and an 'RDF (turtle)' field containing the following content:

```
<a <http://purl.org/dc/dcmitype/Collection>
```

```
$ curl -i -H "Accept:text/turtle" -ufedoraAdmin:fedoraAdmin  
http://ip.address:8080/fcrepo/rest/image-collection/andromeda-galaxy
```

Binaries

We'll use an image for (most) examples of binaries

Download from:

<https://go.nasa.gov/2Hc15jG>

(Save as andromeda.jpg)

Andromeda Galaxy

Credit: NASA



Step 3: Binary Resource Creation (POST)

1. Go to `http://ip.address:8080/fcrepo/rest/image-collection/andromeda-galaxy`
2. In **“Type”** select field choose **“binary”** In **“Identifier”** text field enter **“andromeda.jpg”**
3. In **“File”** choose the andromeda.jpg image
4. Press **“add”** button

The screenshot shows the Fedora Commons web interface. At the top, there are navigation links for 'adora', 'Home', and 'Transactions'. The main heading is 'http://localhost:8080/fcrepo/rest/image-collection/andromeda-galaxy'. Below this, there is a breadcrumb trail: 'home / image-collection / andromeda-galaxy'. The main content area is divided into several sections: 'Created at' (2019-08-21T09:58:16.215Z by fedoraAdmin), 'Last Modified at' (2019-08-21T09:58:16.215Z by fedoraAdmin), and 'Children' (0). Below this is a 'Properties' section with fields for 'fedora:created', 'fedora:createdBy', 'fedora:lastModified', and 'fedora:lastModifiedBy'. The 'rdf:type' field is set to 'http://fedora.info/definitions/v4/repository#Container'. On the right side, there is a 'Create New Child Resource' form with a 'Type' dropdown set to 'binary', an 'Identifier' text field containing 'andromeda.jpg', and a 'File' section with a 'Browse...' button and the filename 'andromeda.jpg'. An 'Add' button is visible below the file section. At the bottom right, there is an 'Update Properties' section with fields for 'PREFIX premis', 'PREFIX test', and 'PREFIX memento'.

```
$ curl -i -X POST -ufedoraAdmin:fedoraAdmin -H"Content-Type: image/jpeg" -H"Slug: andromeda.jpg" --data-binary "@andromeda.jpg" http://ip.address:8080/fcrepo/rest/image-collection/andromeda-galaxy
```

Step 4: Binary Resource Retrieval (GET)

1. You will be redirected to
<http://ip.address:8080/fcrepo/rest/image-collection/andromeda-galaxy/andromeda.jpg/fcr:metadata>
2. Notice the fcr:metadata part!
 - a. Image content is at “andromeda.jpg”
 - b. Its metadata (rdf properties) in a virtual subpath named /fcr:metadata
 - c. The fcr:metadata part is an implementation detail, but the fact that the RDF that describes a binary has a URI and can be linked to is important.

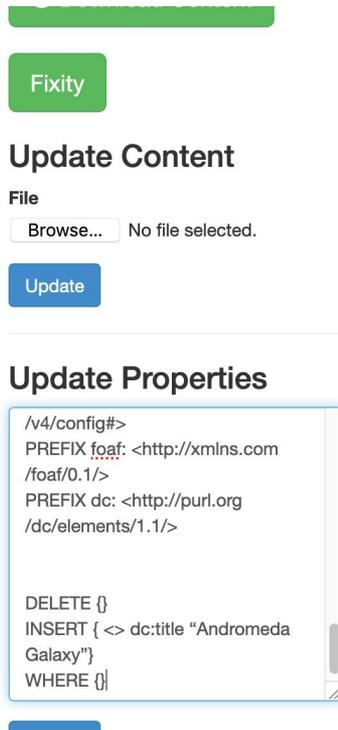
```
$ curl -i -u fedoraAdmin:fedoraAdmin  
http://ip.address:8080/fcrepo/rest/image-collection/andromeda-galaxy/andromeda.jpg/fcr:metadata
```

Step 5: Update RDF Properties (PA)

1. Go to
<http://ip.address:8080/fcrepo/rest/image-collection/andromeda-galaxy>
2. We will add a “dc:title” property using “Update Properties”
 - a. At the end rewrite “DELETE...” “ to

```
DELETE {}  
INSERT { <> dc:title "Andromeda Galaxy"}  
WHERE {}
```

- b. Press “**Update**”



```
$ curl -i -XPATCH -H"Content-type:application/sparql-update" -ufedoraAdmin:fedoraAdmin -d "INSERT  
DATA {<> <http://purl.org/dc/elements/1.1/title> 'Andromeda Galaxy'}"  
http://ip.address:8080/fcrepo/rest/image-collection/andromeda-galaxy/andromeda.jpg/fcr:metadata
```

Our updated RDF Properties from step 5.

Properties	
dc: title	Andromeda Galaxy
ebucore: filename	andromeda.jpg
ebucore: hasMimeType	image/jpeg
fedora: created	2019-08-21T10:07:12.984Z
fedora: createdBy	fedoraAdmin
fedora: hasFixityService	http://localhost:8080/fcrepo/rest/image-collection/andromeda-galaxy/andromeda.jpg/fcr:fixity
fedora: lastModified	2019-08-21T10:08:54.065Z
fedora: lastModifiedBy	fedoraAdmin
iana: describedby	http://localhost:8080/fcrepo/rest/image-collection/andromeda-galaxy/andromeda.jpg/fcr:metadata
premis: hasMessageDigest	urn:sha1:50db9edaaebf54e2afaa801c0d64750591763e57
premis: hasSize	654014
rdf: type	http://fedora.info/definitions/v4/repository#Binary http://fedora.info/definitions/v4/repository#Resource http://www.w3.org/ns/ldp#NonRDFSsource

Last step: Delete a resource (DELETE)

1. Go to
`http://ip.address:8080/fcrepo/rest/image-collection/andromeda-galaxy/andromeda.jpg`
2. Press “**DELETE**” (the red one)
3. Reload
`http://ip.address:8080/fcrepo/rest/image-collection/andromeda-galaxy/andromeda.jpg`

What do you see?

Versioning

Versioning of binary resources is not currently available through the HTML UI.

Delete Resource



Delete

```
$ curl -i -XDELETE -ufedoraAdmin:fedoraAdmin  
http://ip.address:8080/fcrepo/rest/image-collection/andromeda-galaxy/andromeda.jpg
```

Departed

Discovered tombstone resource at /image-collection/andromeda.jpg, departed:
2019-08-21T17:16:17.047Z

Fedora creates tombstone resources at
“original/path/fcr:tombstone” URL, in this case
“image-collection/andromeda-galaxy/andromeda.jpg/fc
r:tombstone”

So, to recreate a resource at that same PATH you need
to delete the tombstone placeholder first

Versioning



Versioning

Versions: created automatically or on demand via the REST-API

Versions: retrieved via Memento protocol

time travel

http://			
2004-01-10	02:45:06	Find	Reconstruct

Find Mementos in Internet Archive, Archive-It, British Library, archive.today, GitHub and [many more!](#)

What is a “version”?

It’s a resource (so it has a URI, can be linked to, etc)

Contains the contents of a resource at a given point in time

It is immutable



What is a “version”?

Has a date (to the second)

Is discoverable (i.e. does this resource have any versions?)

Created by a versioning API, i.e.*not* plain CRUD operations

Meet the Memento Specification:

RFC 7089: <https://tools.ietf.org/html/rfc7089>

“HTTP Framework for Time-Based Access to Resource States”



Key Memento Concepts

- **Memento** - versioned body of the original resource
- **Time Gate** - an endpoint supporting time-based queries for Mementos
- **Time Map** - list of mementos
- **Original Resource** - the resource that was versioned

Creating a Version

Create a resource in Fedora:

<http://ip.address:8080/fcrepo/rest/image-collection/map>

Example 1: Creating a Version

Versions can be created via HTML Interface

Note: Auto-versioning is enabled on the demo site

Versions

Create Version

[View Versions](#)

```
$ curl -i -X POST -ufedoraAdmin:fedoraAdmin  
http://ip.address:8080/fcrepo/rest/image-collection/map/fcr:versions
```

Modify the Resource

Update the metadata of <http://ip.address:8080/fcrepo/rest/image-collection/map>

```
DELETE {}
```

```
INSERT { <> dc:title "Map of Nova Scotia" }
```

```
WHERE {}
```

View the Version History

View versions via HTML Interface



```
$ curl -i -X POST -ufedoraAdmin:fedoraAdmin  
http://ip.address:8080/fcrepo/rest/image-collection/map/fcr:versions
```

Advanced Versioning

You can do many more things with versions:

- Get a list of all versions
- Find the closest version to a specific date
- And more!

<https://wiki.lyrasis.org/display/FEDORA6x/Versioning>

Authorization - Web Access Control

W3C approach for managing authorization using linked data

Interoperable with other applications
that implement the same approach



Fixity

Over time, digital objects **can become corrupt**

Fixity checks help preserve digital objects by **verifying their integrity**



Fixity continued...

On ingest, Fedora can verify a user-provided digest against the calculated value

On demand, A digest can be recalculated and compared at any time via a REST-API request

Limitations of Fixity Checking

- It's a check. Plan for what to do should you encounter a bad binary!
 - Versioning
 - Alternate Backups
- Only works on Fedora-managed content
 - Doesn't retrieve external content
- Digest algorithms implemented: sha1, sha256, and md5

Fixity: Hands On

Create a new binary resource `parade.jpg` inside the `/image-collection` container.

Download from <http://bit.ly/2g8GWy7>

Check the fixity of `parade.jpg`

1. Goto <http://ip.address:8080/fcrepo/rest/image-collection/parade.jpg/fcr:metadata>
2. Click the button labeled *Fixity*



Fixity

```
$ curl -i -u fedoraAdmin:fedoraAdmin -X GET  
http://ip.address:8080/fcrepo/rest/image-collection/parade.jpg/fcr:fixity
```

Conclusion

Fixity works as part of Fedora's preservation tooling to ensure the long term stability of your resources.



***NEW* Simple Search**

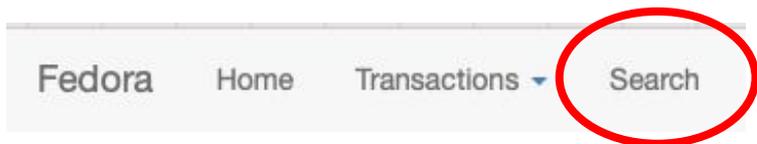
Supports simple queries

Built into Fedora

Based on an internal database index

HTML Search Interface

Click the Search button at the top



Default query displays all repository resources

A screenshot of the search interface. At the top is a navigation bar with 'Fedora', 'Home', 'Transactions' (dropdown), and 'Search'. Below the navigation bar, there are instructions: 'Enter a search to perform. Where field can be one of:' followed by a bulleted list of fields: fedora_id, modified, created, rdf_type, content_size, and mime_type. To the right, there is a query form with 'Field' set to 'fedora_id', 'Operator' set to '<=', and 'Query term' set to 'info:fedora/'. A 'Submit' button is below the form. Below the form, there are instructions: 'operator can be one of <=, < =, >, >=' and 'Query term is the value to compare with.'

Search results

ID	RDF types	Content size	MimeType	Created	Last Modified
http://localhost:8080/rest/image-collection	http://fedora.info/definitions/v4/repository#Container , http://fedora.info/definitions/v4/repository#Resource , http://mementoweb.org/ns#OriginalResource , http://mementoweb.org/ns#TimeGate , http://www.w3.org/ns/ldp#BasicContainer , http://www.w3.org/ns/ldp#Container , http://www.w3.org/ns/ldp#RDFSResource , http://www.w3.org/ns/ldp#Resource	0		2021-03-10T16:35:58.732Z	2021-03-10T16:35:58.732Z
http://localhost:8080/rest/image-collection/andromeda-galaxy	http://fedora.info/definitions/v4/repository#Container , http://fedora.info/definitions/v4/repository#Resource , http://mementoweb.org/ns#OriginalResource , http://mementoweb.org/ns#TimeGate , http://www.w3.org/ns/ldp#BasicContainer , http://www.w3.org/ns/ldp#Container , http://www.w3.org/ns/ldp#RDFSResource , http://www.w3.org/ns/ldp#Resource	109		2021-03-10T16:36:31.337Z	2021-03-10T16:38:25.919Z

Run a Simple Query

Find the map resource

Field: fedora_id

Operator: =

Query: *map

Query (currently only supports one condition at a time).

Field **Operator**

Query term

Run Another Query

Find the parade image by mimetype resource

Field: mime_type

Operator: =

Query: *jpeg

Query (currently only supports one condition at a time).

Field **Operator**

Query term

Messaging

Enables asynchronous integrations

All actions that affect a repository change... result in a message



External Services



Message Based Integrations

External services listen for messages from Fedora

Relevant messages trigger services

This system is scalable and fault-tolerant



External - Indexing

Index repository content for search

Indexing is configurable - could be based on any property

Solr and Elasticsearch have been tested



elastic

External - Triplestore

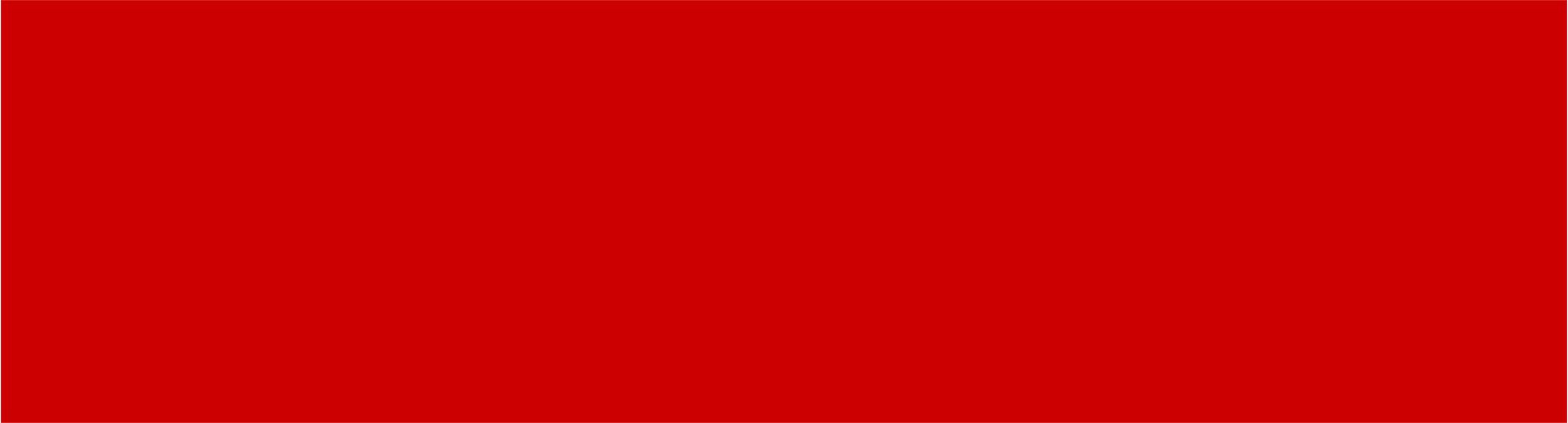
An external triplestore can be used to index the RDF triples of Fedora resources

Any triplestore that supports SPARQL-update can be plugged in

Fuseki, RDF4J, and BlazeGraph have been tested



2021 Roadmap



Release Timeline

1. December 2020: **Fedora 6.0 Alpha**
2. February 2021: **Fedora 6.0 Beta**
3. June 2021: **Fedora 6.0 Release Candidate**
4. June/July 2021: **Fedora 6.0 Release**

Available for Testing

1. [Fedora 6.0 Release Candidate](#)
2. [Migration tools](#)
3. [Migration validator](#)



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Useful Resources

[Fedora user docs](#)

[Fedora 6.0 Design and Development](#)

[Communication Channels](#)