

Fedora 4 / Hydra

Test drive and Roadmap planning

HydraConnect-2, Sept 2014
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Objectives

- Expand understanding of Fedora4 across Hydra community
- Open dialog for:
 - Involvement / Collaboration / Extension / etc

Demo

Esmé Cowles

Using Active Fedora 8 to work with Fedora 4

```
require 'active_fedora'

class TestObject < ActiveFedora::Base
  property :title, predicate: RDF::DC11.title
  property :creator, predicate: RDF::DC11.creator
  has_file_datastream name: 'ds1'
end

# create an object and set a property and datastream content
obj = TestObject.new( title: "Test Object Title", creator: "Dr. Seuss" )
obj.ds1.content = "Test Datastream Content"
obj.ds1.original_name = 'test.txt'
obj.save
puts "#{ActiveFedora.fedora.host}#{ActiveFedora.fedora.base_path}/#{obj.pid}"
```

Choose Your Own Adventure



Photo by Daniel Oines, <https://www.flickr.com/photos/dno1967b/8347363864>

Test Drive

<https://github.com/escowles/testdrive/>

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- Setup Active Fedora 8 and Fedora 4
- Run a few demos to see how it works
- Leave time for questions and troubleshooting

Prerequisites

- Git
 - <http://git-scm.com/downloads/>
- Java 1.7+
 - <http://www.oracle.com/technetwork/java/javase/downloads/>
- Ruby 2.0+
 - <https://github.com/sstephenson/rbenv> or <http://rvm.io/>
- Bundler
 - \$ `gem install bundler`

Setup

- Clone the testdrive repo

```
$ git clone https://github.com/escowles/testdrive.git
```

- Install Gems

```
$ cd testdrive
```

```
$ bundle install
```

- Download Hydra-Jetty with Fedora 4 installed (hope you did this at home)

```
$ bundle exec rake jetty:unzip
```

- Start Jetty:

```
$ bundle exec rake jetty:start
```

Fedora 4 (beta4 snapshot)

<http://localhost:8983/fedora/rest/>

Solr

<http://localhost:8983/solr/>

\$ bundle exec ruby demo1.rb # object with properties

```
require 'active_fedora'

class TestObject < ActiveFedora::Base
  property :title, predicate: RDF::DC11.title
  property :creator, predicate: RDF::DC11.creator
end

# create an object and set a property and datastream content
obj = TestObject.new( title: "Test Object Title", creator: "Dr. Seuss" )
obj.save
puts "#{ActiveFedora.fedora.host}#{ActiveFedora.fedora.base_path}/#{obj.pid}"
```

\$ bundle exec ruby demo1.rb # object with properties

testdrive > bundle exec ruby demo1.rb

<http://127.0.0.1:8983/fedora/rest/1e/80/55/36/1e805536-17cc-4acd-9550-27cf0059f667>

testdrive >

\$ bundle exec ruby demo1.rb # object with properties

curl http://127.0.0.1:8983/fedora/rest/1e/80/55/36/1e805536-17cc-4acd-9550-27cf0059f667

```
<http://127.0.0.1:8983/fedora/rest/1e/80/55/36/1e805536-17cc-4acd-9550-27cf0059f667> <http://fedora.info/
definitions/v4/rest-api#hasAccessRoles> <http://127.0.0.1:8983/fedora/rest/1e/
80/55/36/1e805536-17cc-4acd-9550-27cf0059f667/fcr:accessroles> ;
  <http://fedora.info/definitions/v4/rest-api#exportsAs> <http://127.0.0.1:8983/fedora/rest/1e/
80/55/36/1e805536-17cc-4acd-9550-27cf0059f667/fcr:export?format=jcr/xml> ;
  <http://fedora.info/definitions/v4/repository#hasParent> <http://127.0.0.1:8983/fedora/rest/1e/80/55/36> ;
  a <http://www.w3.org/ns/ldp#Container> , <http://www.w3.org/ns/ldp#DirectContainer> ;
  <http://www.w3.org/ns/ldp#membershipResource> <http://127.0.0.1:8983/fedora/rest/1e/
80/55/36/1e805536-17cc-4acd-9550-27cf0059f667> ;
  <http://www.w3.org/ns/ldp#hasMemberRelation> <http://fedora.info/definitions/v4/repository#hasChild> ;
  <http://fedora.info/definitions/v4/rest-api#writable> "true"^^<http://www.w3.org/2001/XMLSchema#boolean> ;
  a <http://www.jcp.org/jcr/nt/1.0folder> , <http://www.jcp.org/jcr/nt/1.0hierarchyNode> , <http://
www.jcp.org/jcr/nt/1.0base> , <http://www.jcp.org/jcr/mix/1.0created> , <http://fedora.info/definitions/v4/
rest-api#resource> , <http://fedora.info/definitions/v4/rest-api#object> , <http://fedora.info/definitions/v4/
rest-api#relations> , <http://www.jcp.org/jcr/mix/1.0created> , <http://www.jcp.org/jcr/mix/1.0lastModified> ,
<http://www.jcp.org/jcr/mix/1.0lockable> , <http://www.jcp.org/jcr/mix/1.0referenceable> , <http://purl.org/
dc/elements/1.1/describable> , <http://fedora.info/definitions/v4/rest-api#resource> ;
```

...

\$ bundle exec ruby demo1.rb # object with properties

<http://127.0.0.1:8983/fedora/rest/1e/80/55/36/1e805536-17cc-4acd-9550-27cf0059f667>

Test Object Title

[Home](#) / [1e](#) / [80](#) / [55](#) / [36](#) / 1e805536-17cc-4acd-9550-27cf0059f667

UUID
ddacb48f-dfc6-4100-978a-ece210906d10

Created at
2014-09-28T20:38:37.77Z by bypassAdmin

Last Modified at
2014-09-28T20:38:37.77Z by bypassAdmin

Children

Create New Node

Type

Identifier

Properties

dc: creator
Dr. Seuss

dc: title
Test Object Title

fcrepo: created
2014-09-28T20:38:37.77Z

fcrepo: createdBy
bypassAdmin

Update Properties

```
PREFIX dc:
<http://purl.org
/dc/elements/1.1/>
PREFIX nt:
<http://www.jcp.org
/jcr/nt/1.0>
```

\$ bundle exec ruby demo1.rb # object with properties

<http://127.0.0.1:8983/fedora/rest/1e/80/55/36/1e805536-17cc-4acd-9550-27cf0059f667>

- Fedora object with DC properties
 - dc:title also used for page title
- Content negotiation for views
 - Default: RDF (Turtle)
 - Other RDF flavors available (RDF/XML, NTriples, JSON-LD)
 - HTML UI with basic browse and admin functionality

\$ bundle exec ruby demo2.rb # add a datastream

```
require 'active_fedora'

class TestObject < ActiveFedora::Base
  property :title, predicate: RDF::DC11.title
  property :creator, predicate: RDF::DC11.creator
  has_file_datastream name: 'ds1'
end

# create an object and set a property and datastream content
obj = TestObject.new( title: "Test Object Title", creator: "Dr. Seuss" )
obj.ds1.content = "Test Datastream Content"
obj.ds1.original_name = 'test.txt'
obj.save
puts "#{ActiveFedora.fedora.host}#{ActiveFedora.fedora.base_path}/#{obj.pid}"
```


\$ bundle exec ruby demo2.rb # add a datastream

<http://127.0.0.1:8983/fedora/rest/28/6e/0c/41/286e0c41-b242-4b0c-b184-53e6b59a6ccf>

- Children contains link to datastream, e.g.:

<http://127.0.0.1:8983/fedora/rest/28/6e/0c/41/286e0c41-b242-4b0c-b184-53e6b59a6ccf/ds1>

- Content negotiation like objects
- Fixity checking
- Content properties
 - MIME type, SHA-1 checksum, original filename, size

\$ bundle exec ruby demo3.rb # link w/custom predicate

```
require 'active_fedora'
```

```
class MYVOCAB < RDF::Vocabulary("http://example.org/vocab/")  
  property :creator  
end
```

```
class TestConcept < ActiveFedora::Base  
  property :label, predicate: RDF::SKOS.prefLabel  
end
```

```
class TestObject < ActiveFedora::Base  
  property :title, predicate: RDF::DC11.title  
  property :creator, predicate: MYVOCAB.creator, class_name: 'TestConcept'  
  has_file_datastream name: 'ds1'  
end
```

```
# create dr. seuss record  
dr_seuss = TestConcept.new( label: "Dr. Seuss" )  
dr_seuss.save
```

```
# create an object and set a property and datastream content  
obj = TestObject.new( title: "Test Object Title", creator: dr_seuss.rdf_subject )  
obj.ds1.content = "Test Datastream Content"  
obj.ds1.original_name = 'test.txt'  
obj.save  
puts "#{ActiveFedora.fedora.host}#{ActiveFedora.fedora.base_path}/#{obj.pid}"
```

\$ bundle exec ruby demo3.rb # link w/custom predicate

<http://127.0.0.1:8983/fedora/rest/bc/91/f7/8d/bc91f78d-6bbb-46c2-b734-146a095f8144>

- ns002:creator links to another Fedora object
- ns001:prefLabel = "Dr. Seuss"
- Namespaces: <http://127.0.0.1:8983/fedora/rest/fcr:namespaces>
- Register namespaces to see ex:creator and skos:prefLabel:

Register Namespace

Prefix

URI

\$ bundle exec ruby demo4.rb # datastream versioning

```
require 'active_fedora'
```

```
class TestObject < ActiveFedora::Base
  property :title, predicate: RDF::DC11.title
  property :creator, predicate: RDF::DC11.creator
  has_file_datastream name: 'ds1'
end
```

```
# create an object and set a property and datastream content
```

```
obj = TestObject.new( title: "Test Object Title", creator: "Dr. Seuss" )
```

```
obj.ds1.content = "Test Datastream Content"
```

```
obj.ds1.original_name = 'test.txt'
```

```
obj.save
```

```
obj.ds1.create_version
```

```
obj.ds1.content = "New Version of Datastream Content"
```

```
obj.save
```

```
puts "#{ActiveFedora.fedora.host}#{ActiveFedora.fedora.base_path}/#{obj.pid}"
```

\$ bundle exec ruby demo4.rb # datastream versioning

<http://127.0.0.1:8983/fedora/rest/a0/d6/c3/79/a0d6c379-631f-46f1-ab0e-c55bc6847fdf>

- Datastream `fedora:hasVersions` links to versions

<http://127.0.0.1:8983/fedora/rest/a0/d6/c3/79/a0d6c379-631f-46f1-ab0e-c55bc6847fdf/ds1/fcr:versions>

- Root version = datastream when it was created
- Next version = datastream when `create_version` was called
- Can configure auto-versioning
 - create a new version with every update
- Can version objects
 - with or without all child objects/datastreams

\$ bundle exec ruby demo5.rb # xml datastreams still work

```
require 'active_fedora'

class TestObject < ActiveFedora::Base
  property :title, predicate: RDF::DC11.title
  property :creator, predicate: RDF::DC11.creator
  has_file_datastream name: 'ds1'
  has_metadata 'dc', type: ActiveFedora::QualifiedDublinCoreDatastream
  has_attributes :publisher, datastream: 'dc'
end

# create an object and set a property and datastream content
obj = TestObject.new( title: "Test Object Title", creator: "Dr. Seuss" )
obj.publisher = "Random House"
obj.ds1.content = "Test Datastream Content"
obj.ds1.original_name = 'test.txt'
obj.save
puts "#{ActiveFedora.fedora.host}#{ActiveFedora.fedora.base_path}/#{obj.pid}"
```

\$ bundle exec ruby demo5.rb # xml datastreams still work

<http://127.0.0.1:8983/fedora/rest/76/35/6b/86/76356b86-0b88-4c84-9487-43962a814681>

- dc datastream containing DC XML

<http://127.0.0.1:8983/fedora/rest/76/35/6b/86/76356b86-0b88-4c84-9487-43962a814681/dc/fcr:content>

- Reasons to put metadata in datastreams
 - Not all metadata is RDF
 - Fedora 4 doesn't support all RDF (e.g. named graphs)

Questions? Problems?

<https://groups.google.com/group/fedora-tech>
<https://groups.google.com/group/hydra-tech>

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