

# Migrating from Fedora 3 to Fedora 4

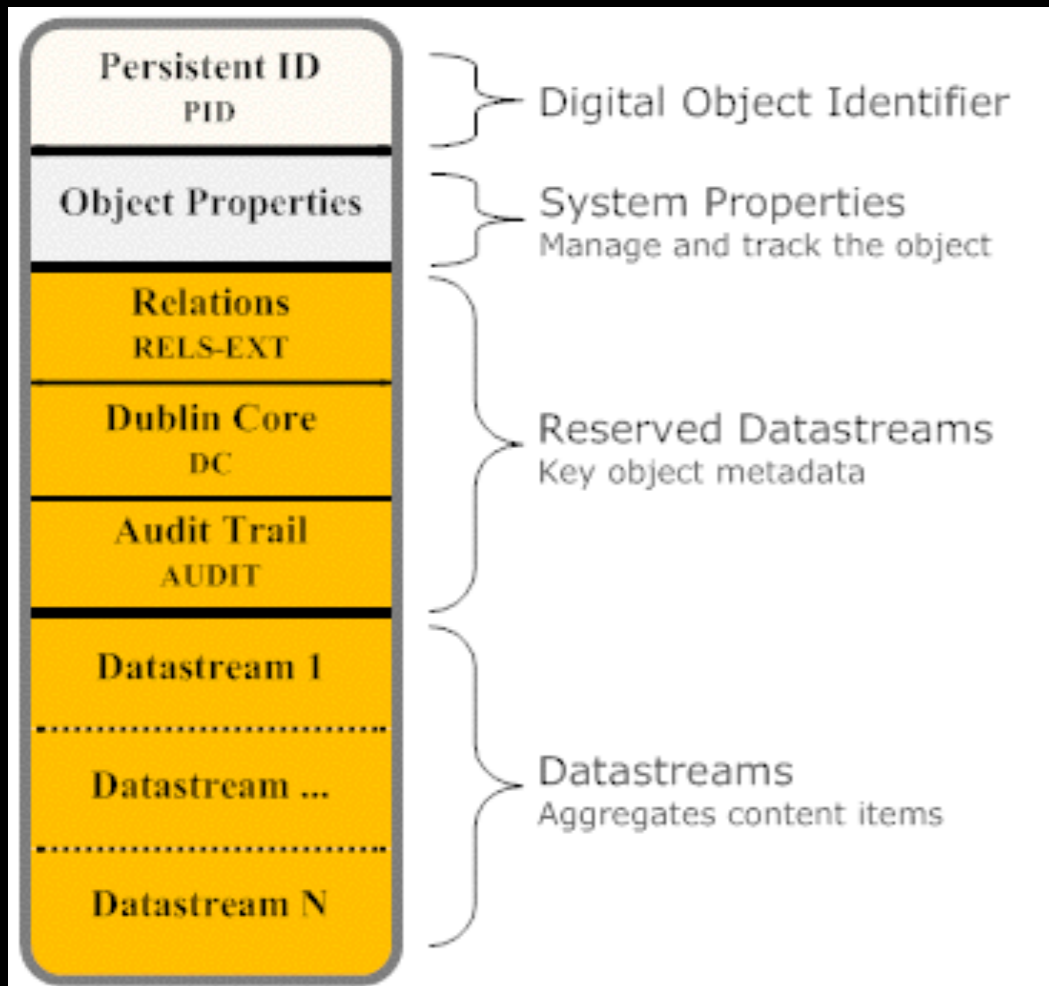
David Wilcox  
Fedora Product Manager  
DuraSpace

The logo for DuraSpace, featuring the word "DuraSpace" in a stylized, lowercase font with a circular graphic element to the left.

# Fedora 3 vs. Fedora 4

Fedora 3	Fedora 4
Objects and Datastreams	Nodes with properties
Flat file system (bucket)	Hierarchy
PID	Path (UUID)
RELS-EXT, DC, etc.	Properties

# Objects vs. nodes



## UUID

e43af63d-84c7-48aa-b7de-2849caf8a23f

## Created at

2014-07-17T13:41:54.39Z by bypassAdmin

## Last Modified at

2014-07-21T19:46:05.438Z by bypassAdmin

## Children

1. <http://localhost:8080/rest/a2/92/bb/8d/a292bb8d-9543-4137-8c74-3f3c90b231d3/fd>

## Properties

### dc: contributor

<http://id.loc.gov/authorities/names/nb2003039056>

### dc: title

Test Object

### fcrepo: created

2014-07-17T13:41:54.39Z

### fcrepo: createdBy

bypassAdmin

### fcrepo: hasChild

<http://localhost:8080/rest/a2/92/bb/8d/a292bb8d-9543-4137-8c74-3f3c90b231d3/fd>

### fcrepo: hasParent

<http://localhost:8080/rest/a2/92/bb/8d>

### fcrepo: lastModified

2014-07-21T19:46:05.438Z

### fcrepo: lastModifiedBy

bypassAdmin

# Nodes with content

**UUID**

09b7c0fb-5283-442f-83fc-72b800c4730a

**Created at**

2014-07-21T19:46:05.438Z by bypassAdmin

**Last Modified at**

2014-07-21T19:46:05.411Z by bypassAdmin

**Children**

## Properties

**fcrepo: created**

2014-07-21T19:46:05.438Z

**fcrepo: createdBy**

bypassAdmin

**fcrepo: hasContent**

<http://localhost:8080/rest/a2/92/bb/8d/a292bb8d-9543-4137-8c74-3f3c90b231d3/fd/f9/f2/8f/dfd9f28f-0d3a-43f8cd4f78032/fcr:content>

**fcrepo: hasParent**

<http://localhost:8080/rest/a2/92/bb/8d/a292bb8d-9543-4137-8c74-3f3c90b231d3/fd/f9/f2/8f>

**fcrepo: lastModified**

2014-07-21T19:46:05.411Z

# Content properties

## Content Properties

<http://localhost:8080/rest/a2/92/bb/8d/a292bb8d-9543-4137-8c74-3f3c90b231d3/fd/f9/f2/8f/dfd9f28f-0d3a-46b8-bed2-3f8cd4f78032/fcr:content>

fcrepo: **isContentOf**

<http://localhost:8080/rest/a2/92/bb/8d/a292bb8d-9543-4137-8c74-3f3c90b231d3/fd/f9/f2/8f/dfd9f28f-0d3a-46b8-bed2-3f8cd4f78032>

fcrepo: **lastModified**

2014-07-21T19:46:05.438Z

fcrepo: **lastModifiedBy**

bypassAdmin

fcrepo: **contentType**

image/jpeg

fcrepo: **mixinTypes**

fedora:binary

fcrepo: **primaryType**

nt:resource

fedora: **digest**

urn:sha1:d707a4a74792155bcf1896dd129960625105661a [check fixity](#)

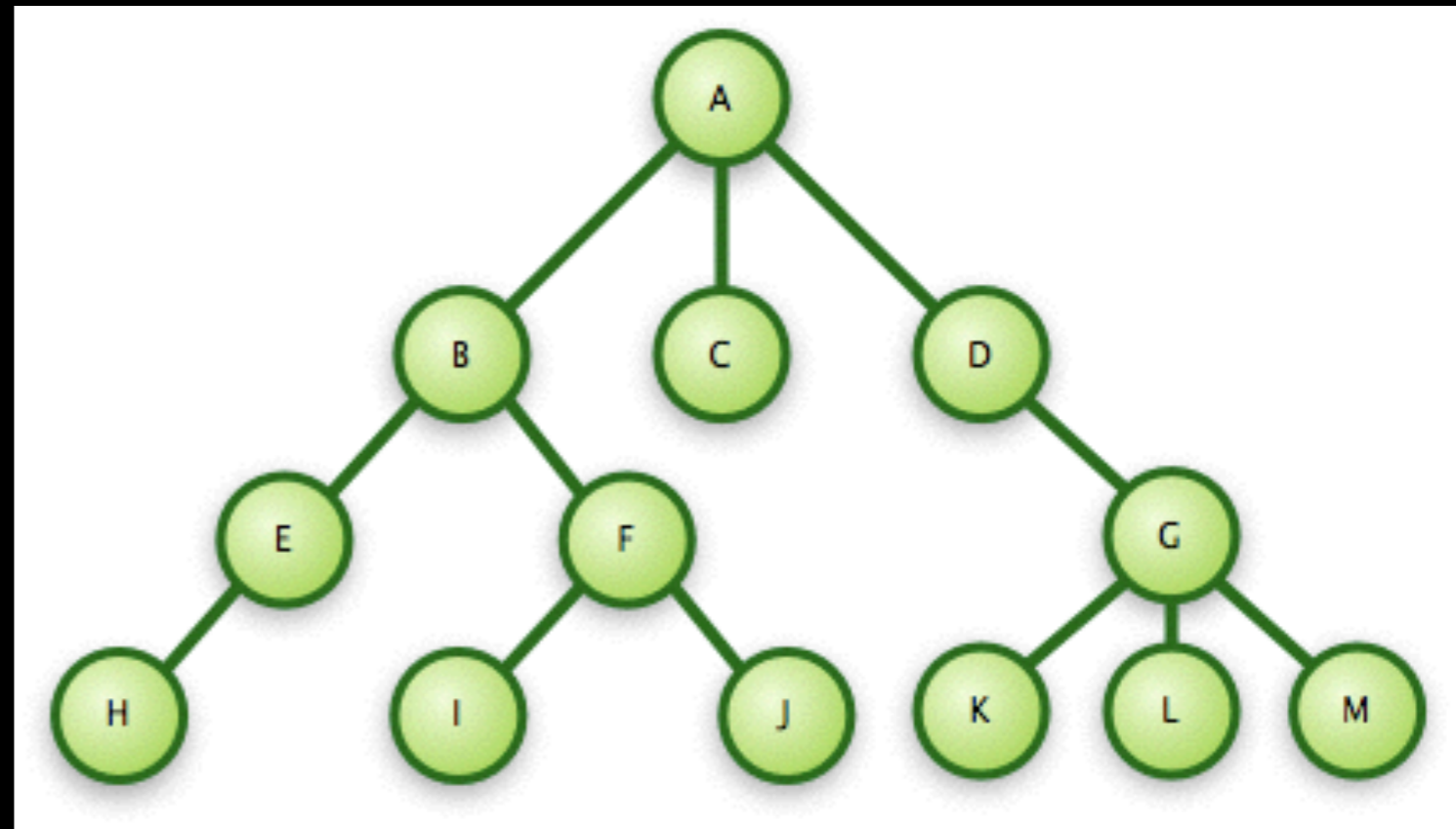
fedora: **writable**

true

premis: **hasSize**

66235

# Bucket vs. hierarchy



# PID vs. path

islandora:imageCollection OR utsc:12345

VS

*/rest/a2/92/bb/8d/*

a292bb8d-9543-4137-8c74-3f3c90b231d3



# XML vs. properties

```
<?xml version="1.0" encoding="UTF-8"?>
<modsCollection xmlns:xlink="http://www.w3.org/1999/xlink" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://www.loc.gov/mods/v3" xsi:schemaLocation="http://www.loc.gov/mods/v3 http://www.loc.gov/mods/v3/3.xsd">
<mods version="3.3">

  <titleInfo>
    <title>At Gettysburg, or, What a Girl Saw and Heard of the Battle: A True Narrative</title>
  </titleInfo>
  <name type="personal">
    <namePart>Alleman, Tillie Pierce [1848-1914]</namePart>
    <role>
      <roleTerm type="code" authority="marcrelator">aut</roleTerm>
      <roleTerm type="text" authority="marcrelator">Author</roleTerm>
    </role>
  </name>
  <typeOfResource>text</typeOfResource>
  <originInfo>
    <place>
      <placeTerm type="text">New York</placeTerm>
    </place>
    <publisher>W. Lake Borland</publisher>
    <dateIssued keyDate="yes" encoding="w3cdtf">1889</dateIssued>
  </originInfo>
  <language>
    <languageTerm authority="iso639-2b">eng</languageTerm>
    <languageTerm type="text">English</languageTerm>
  </language>
  <physicalDescription>
    <internetMediaType>text/html</internetMediaType>
    <digitalOrigin>reformatted digital</digitalOrigin>
  </physicalDescription>
```

## Properties

dc: contributor  
<http://id.loc.gov/authorities/names/nb2003039056>

dc: title  
Test Object

fcrepo: created  
2014-07-17T13:41:54.39Z

fcrepo: createdBy  
bypassAdmin

fcrepo: hasChild  
<http://localhost:8080/rest/a2/92/bb/8d/a292bb8d-9543-4137>

fcrepo: hasParent  
<http://localhost:8080/rest/a2/92/bb/8d>

fcrepo: lastModified  
2014-07-21T19:46:05.438Z

fcrepo: lastModifiedBy  
bypassAdmin

fcrepo: mixinTypes  
fedora:object  
fedora:resource



# Migration considerations

# Data modelling

- Objects in Fedora 4 are natively hierarchical
  - This hierarchy can be used to accurately represent the structure of your objects
  - In this case, things like security policies can be inherited

# Front-end application

- Are you using Hydra or Islandora?  
Something custom?
- How customized is your implementation?
- Is there a community you can contribute effort to?

# Ingesting vs. federating

- Fedora 4 can federate over an existing datastore
- A Fedora 3 connector has been developed
  - This may provide a good stop-gap migration method
  - However, there will be no opportunities for data enhancement

# Security

- Fedora 4 has a pluggable authentication framework
  - **Role-based and XACML authentication have been implemented**
- Existing Fedora 3 security policies will need to be tested in Fedora 4

# Versions

- Many Fedora 3 repositories use versioning
  - Object and datastream levels
- How to handle dates when migrating versions
  - Create a new metadata field for the relevant date?



# Disseminators

- Typically used for XSLT transformations
  - **Are there other uses?**
- How can we recreate or enhance the functionality in Fedora 4?

New opportunities

# Content Modelling

- Nodes have one primary type and one or more mixin types
  - Mixins are cumulative
  - Mixins can add functionality, access policies, and events
- You can define new mixins as needed



# Enhancing repository data

- Linked Open Data can make your repository better!
  - Link to authority records
  - Publish content to other systems
  - Pull in new content

# RDF metadata

- Convert your XML metadata to RDF!
  - Link to authorities
  - Link to other related objects
  - Integrate multiple RDF ontologies
  - Make your data reusable!



# LOD Browsers

## The Big Smoke

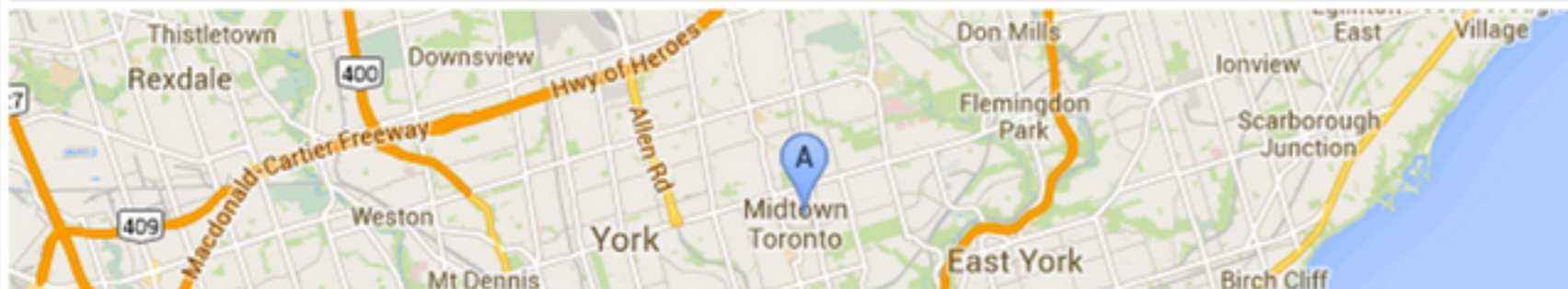
### OVERVIEW



### PRODUCTION DETAILS

Created: 04 February 2013

### NOTABLE LOCATIONS



### MORE ON OTHER SITES

More information can be found at:

- [Wikipedia](#) (2)

### LINKED DATA

This page is also available as Linked Data.

Linked Data URI:

<http://dbpedia.org/resource/Toronto>

More data:

- [ookaboo.com](#)
- [dbpedia.org](#) (2 ,3 ,4 ,5 ,6 ,7 ,8 ,9 ,10 ,11 ,12 ,13 ,14 ,15 ,16 ,17 ,18 ,19 ,20 ,21 ,22 ,23 ,24 ,25 ,26 ,27 ,28 ,29 ,30 ,31 ,32 ,33 ,34 ,35 ,36 ,37 ,38 ,39 ,40 ,41 ,42 ,43)
- [wordnet.rkbexplorer.com](#)
- [data.nytimes.com](#) (2)
- [dbpedialite.org](#) (2 ,3 ,4 ,5 ,6 ,7 ,8 ,9 ,10 ,11 ,12 ,13 ,14 ,15 ,16 ,17 ,18 ,19 ,20 ,21 ,22 ,23 ,24 ,25 ,26 ,27 ,28 ,29 ,30 ,31 ,32 ,33 ,34 ,35)
- [linkedgeodata.org](#)
- [mpii.de](#) (2)
- [rdf.freebase.com](#) (2 ,3 ,4 ,5)
- [sw.cyc.com](#)
- [sw.opencyc.org](#) (2 ,3)

# Open Annotations

Vocabulary Item	Type	Description
oa:Annotation	Class	The class for Annotations The oa:Annotation class <b>MUST</b> be associated with an Annotation.
oa:hasBody	Relationship	The relationship between an Annotation and the Body of the Annotation There <b>SHOULD</b> be 1 or more oa:hasBody relationships associated with an Annotation but there <b>MAY</b> be 0.
oa:hasTarget	Relationship	The relationship between an Annotation and the Target of the Annotation There <b>MUST</b> be 1 or more oa:hasTarget relationships associated with an Annotation.

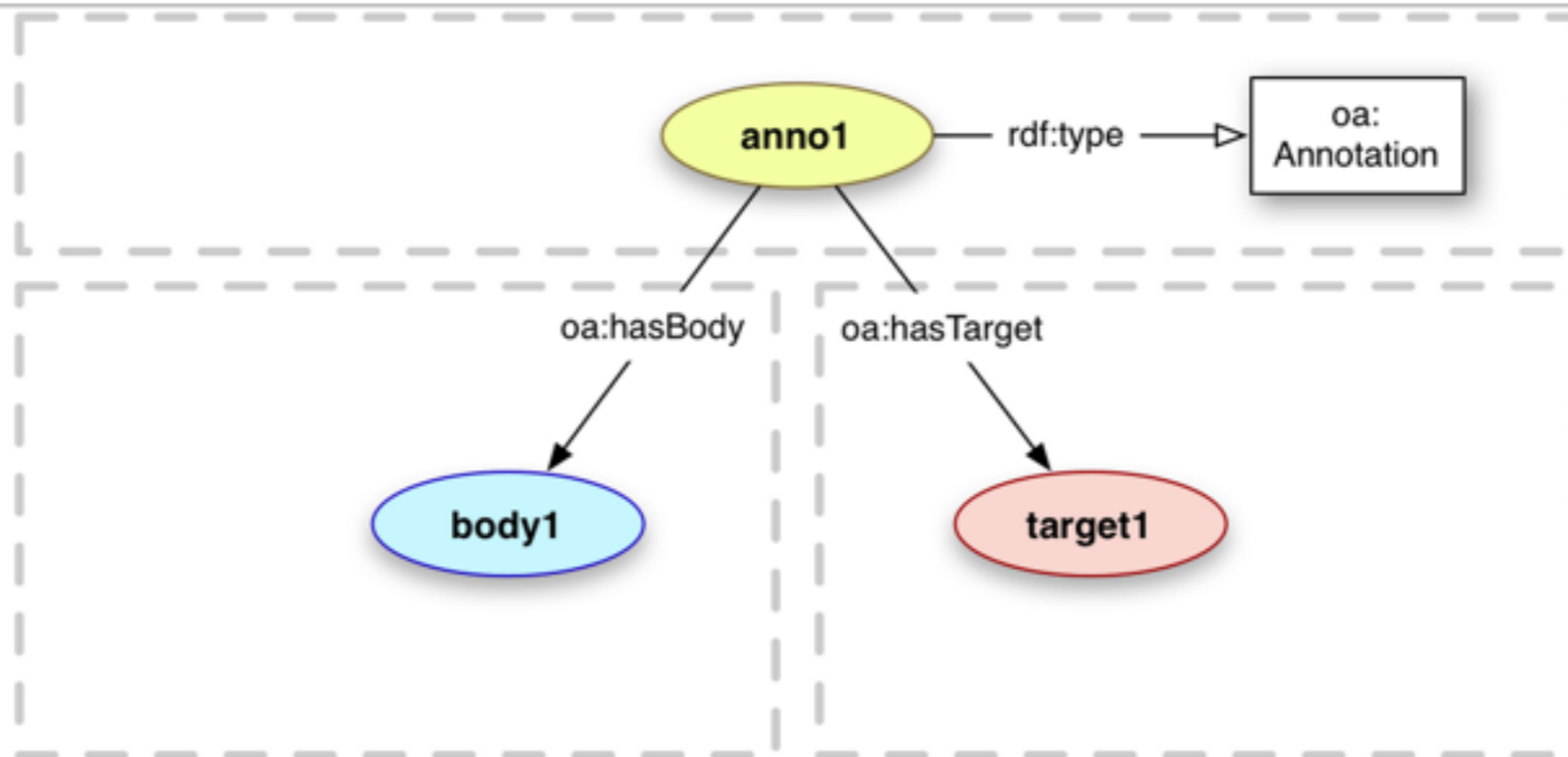


Figure 2.1. Basic Annotation Model