Preservation in the Cloud: Three Ways

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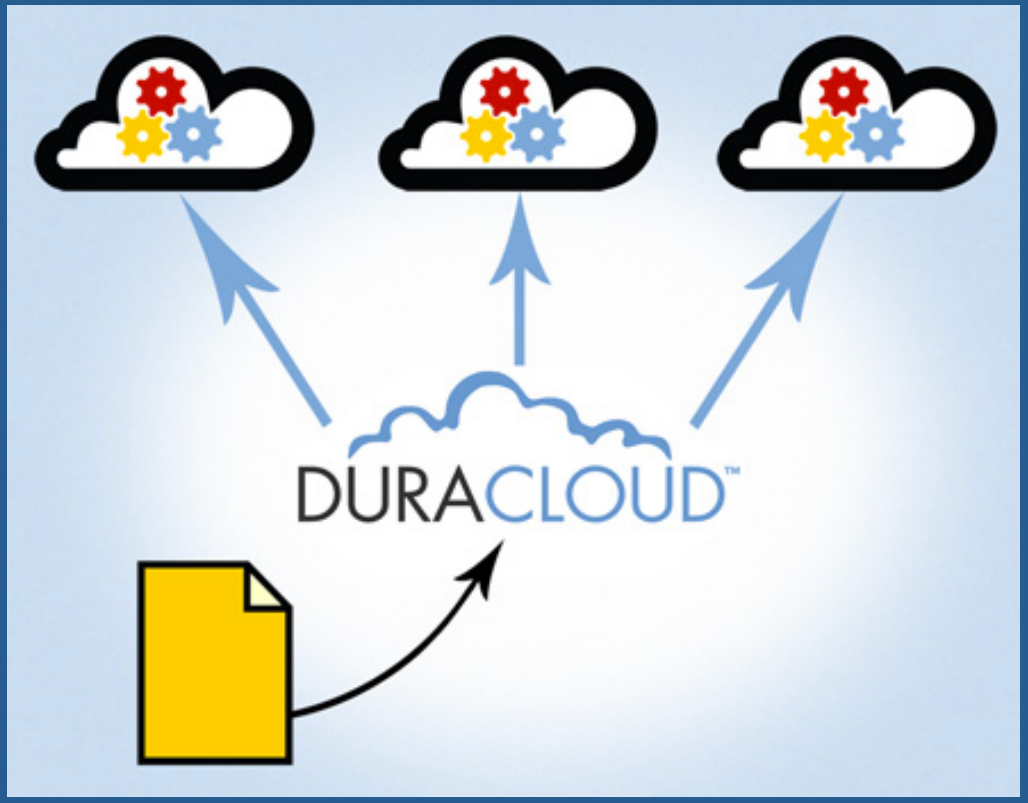
What is DuraCloud?

- Open technology ***and*** managed service that utilizes cloud infrastructure for preservation support and access services

✓ *Upload once and make multiple copies to various storage providers*

✓ *Review integrated health reports from ongoing health checking services*

✓ *Access anywhere from any Internet connected device*



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DuraCloud @ MIT Libraries

Richard Rodgers

Open Repositories 2012

Edinburgh, Scotland

MIT Libraries Use Case

- Core: replication for preservation in our production IRs – heterogeneous types (video)
- System administration practices only address HW or admin failures – other errors unsecured
- Service should be automatic yet visible
- Geared towards collection and system admins
- Must be cost-effective, user friendly, etc

DuraCloud Value Proposition

- Provides convenient geo-distributed copy management
- Multi-vendor model buys abstraction and lock-in prevention
- Tools and APIs for DSpace integration
- High-bandwidth access to developers
- Platform for preservation services
- Institution-friendly service terms

Challenges/Solutions

- Need content containers: AIPs over loose files
- Repository managers involvement: admin UI integration, in addition to batch tools
- Big data files: queued v synchronous operation
- Reduce mistakes: automatic replication
- Deletion is forever: logical deletes + GC
- Service visibility: ‘ad hoc’ auditing
- Preserve what matters: copy masters (video)

Preservation in the Cloud: Islandora and Duracloud

Mark Leggott, University of PEI/DiscoveryGarden

Open Repositories 2012 - Edinburgh, Scotland

Islandora 101

- Drupal+Fedora framework from UPEI
- Flexible UI on top of Fedora + other apps
- Deployed in 100+ institutions, growing
- Desire to provide stronger preservation features and services - e.g. PREMIS coming
- DuraCloud a natural extension

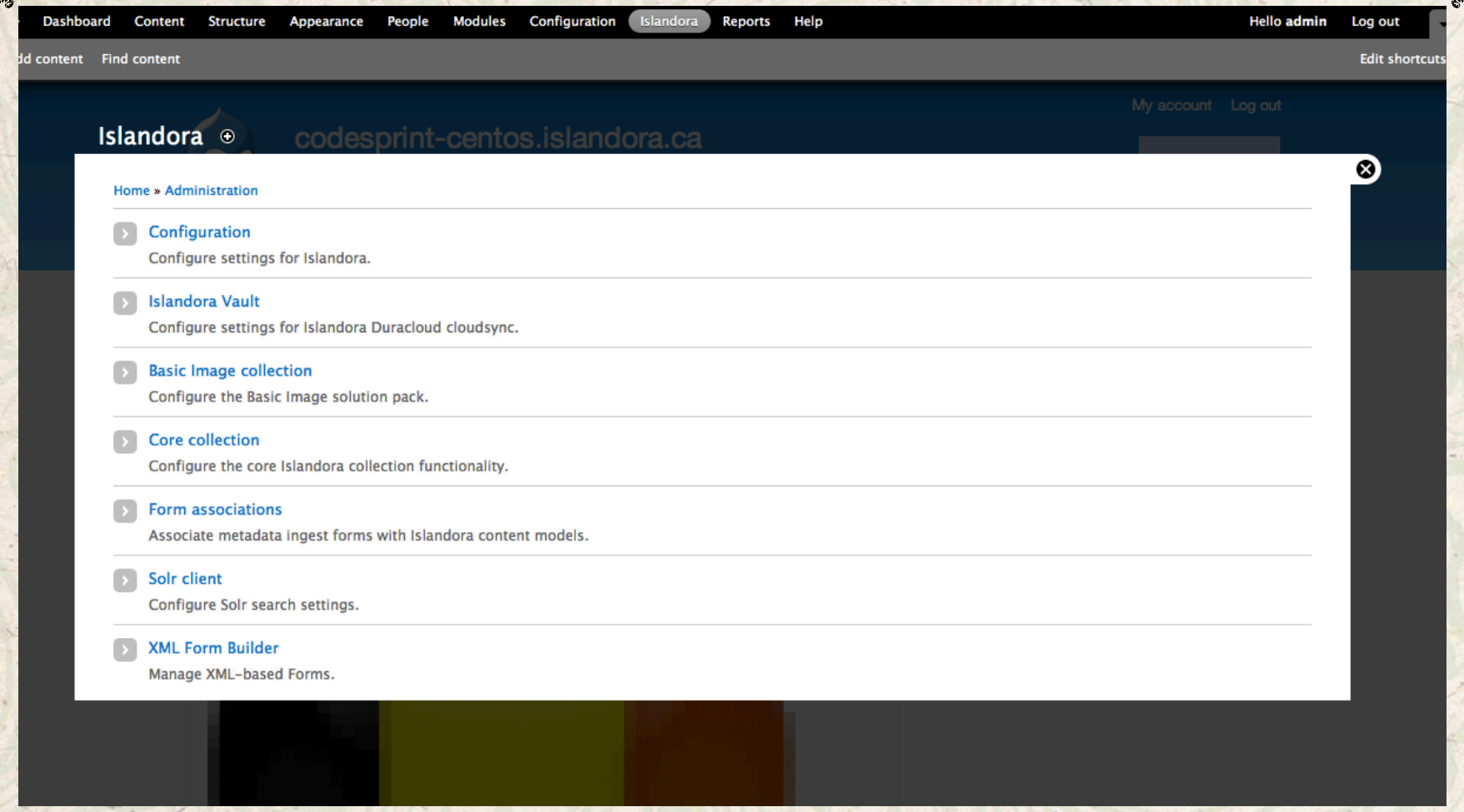
DiscoveryGarden

Approach

- Leverage DuraCloud(DC) + DuraSync(DS)
- Maintain context of individual objects and/ or complete collections
- “Single Button” restore of damaged assets
- Integrate with standard or private DC

1st Release

- Admin panel for setup of DC and DS
- "Vault" component on Manage Tab
  - Access to DS/DC functions
  - Enable sync & restore from specific copy
  - View DC and DS reports



Admin Panel

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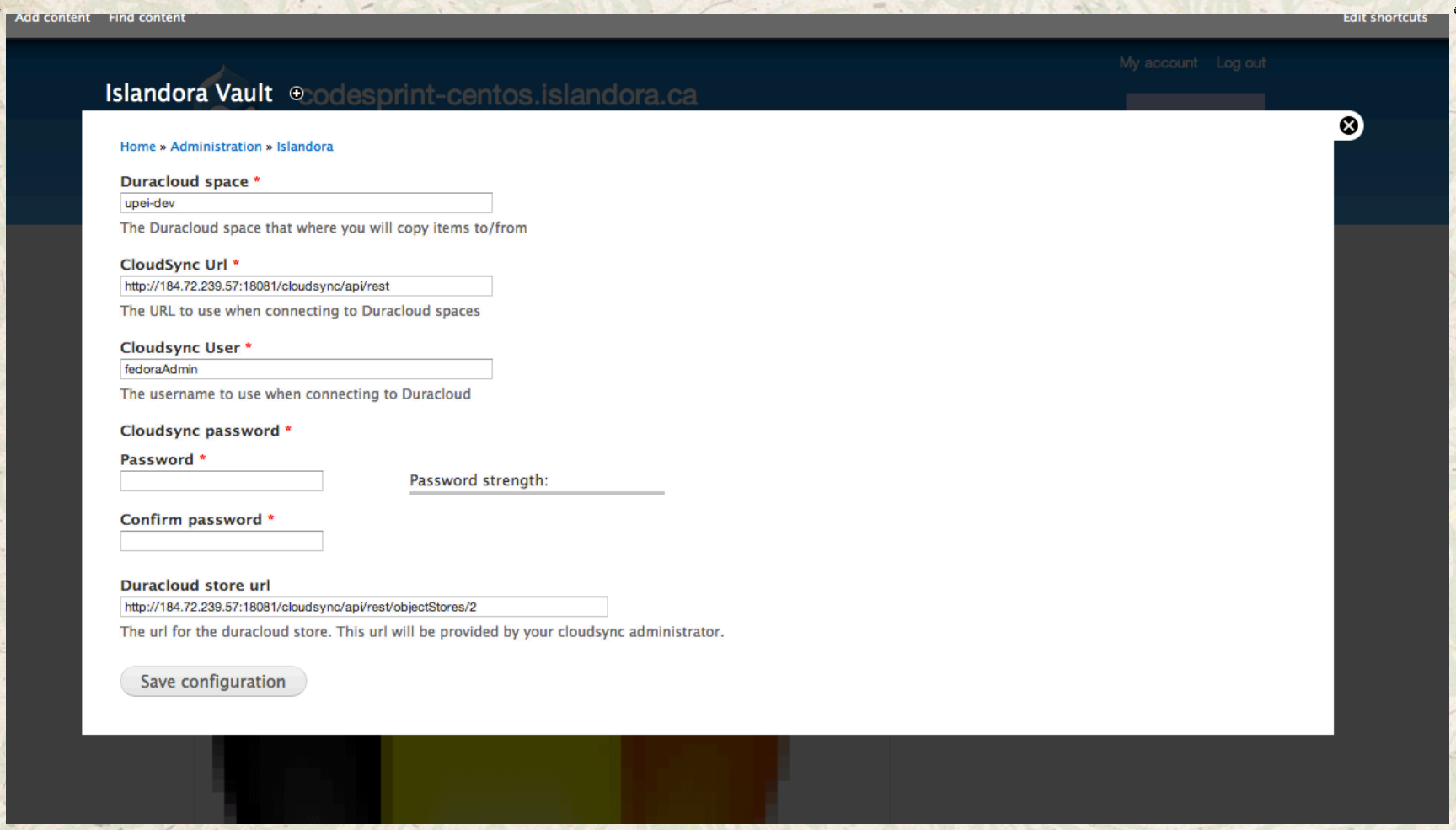
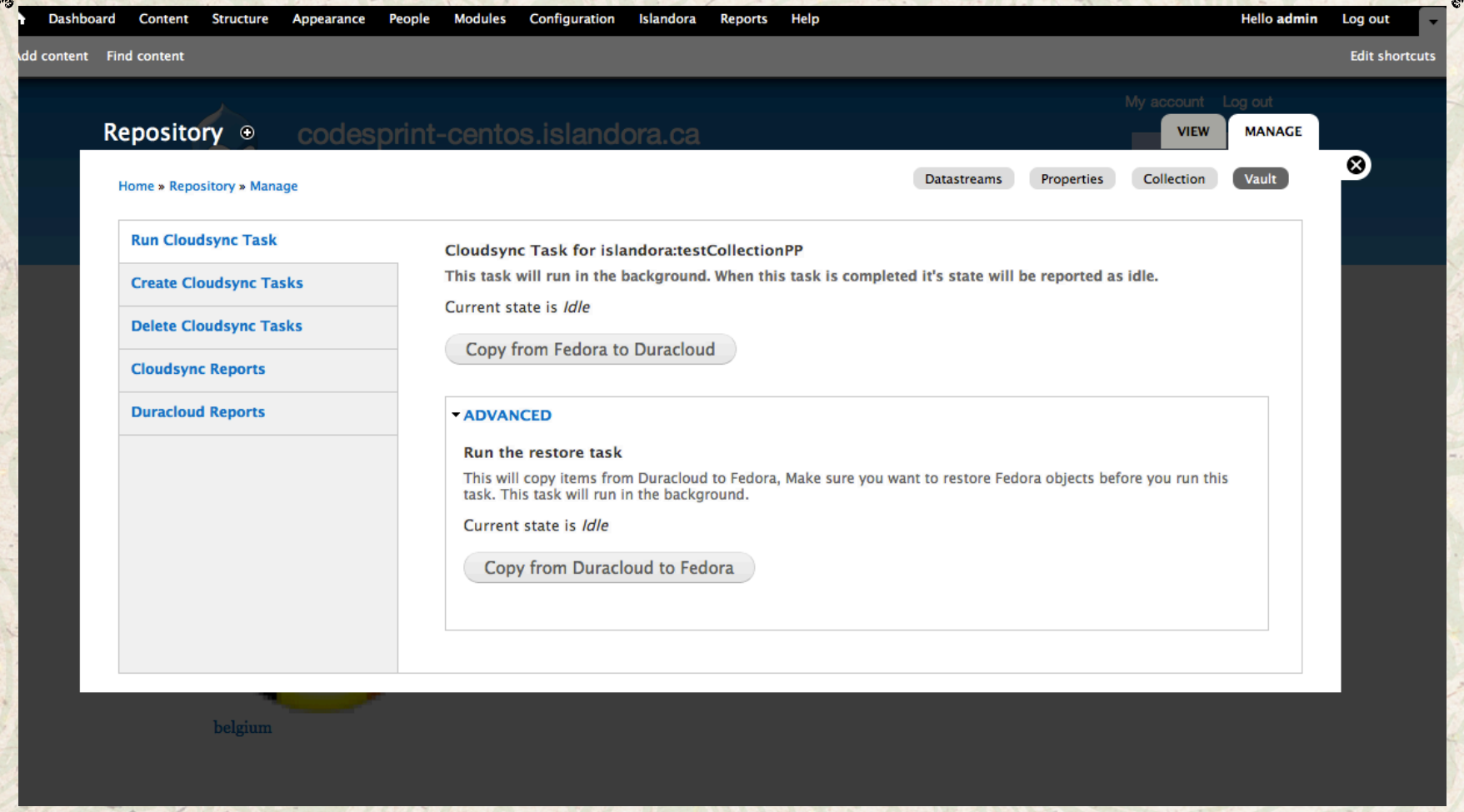


Vault Functions

DiscoveryGarden



Collection Restore

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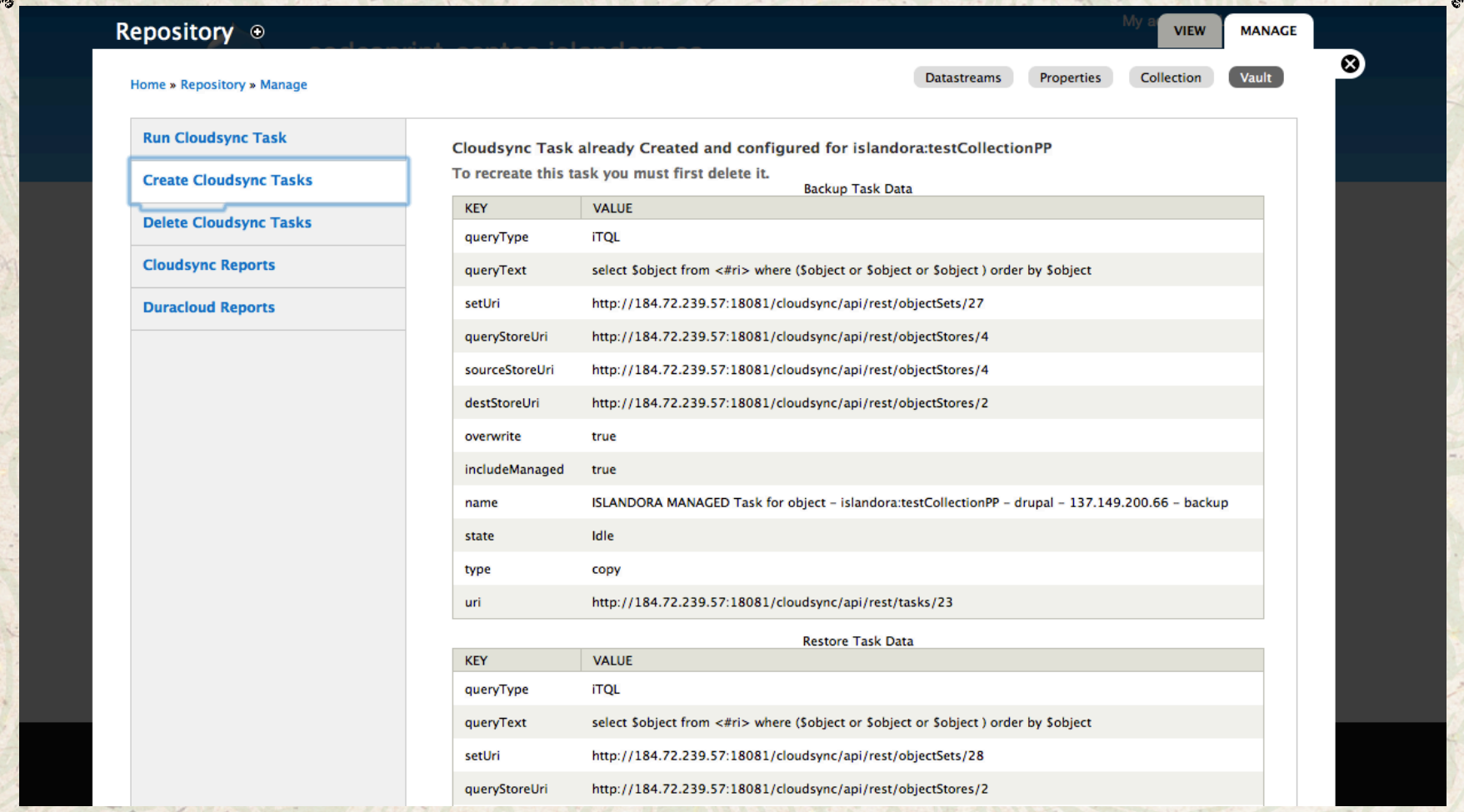

Object Health

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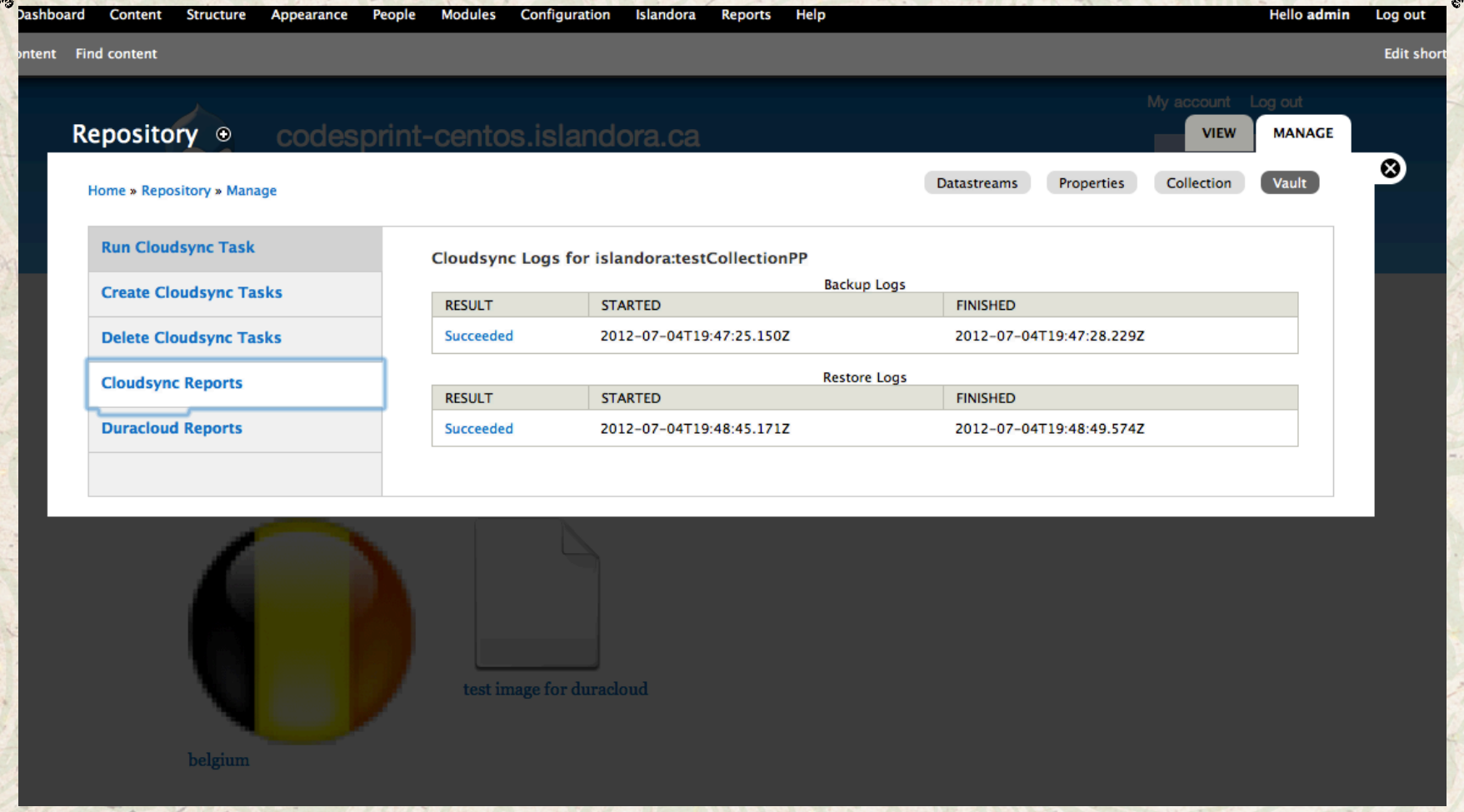
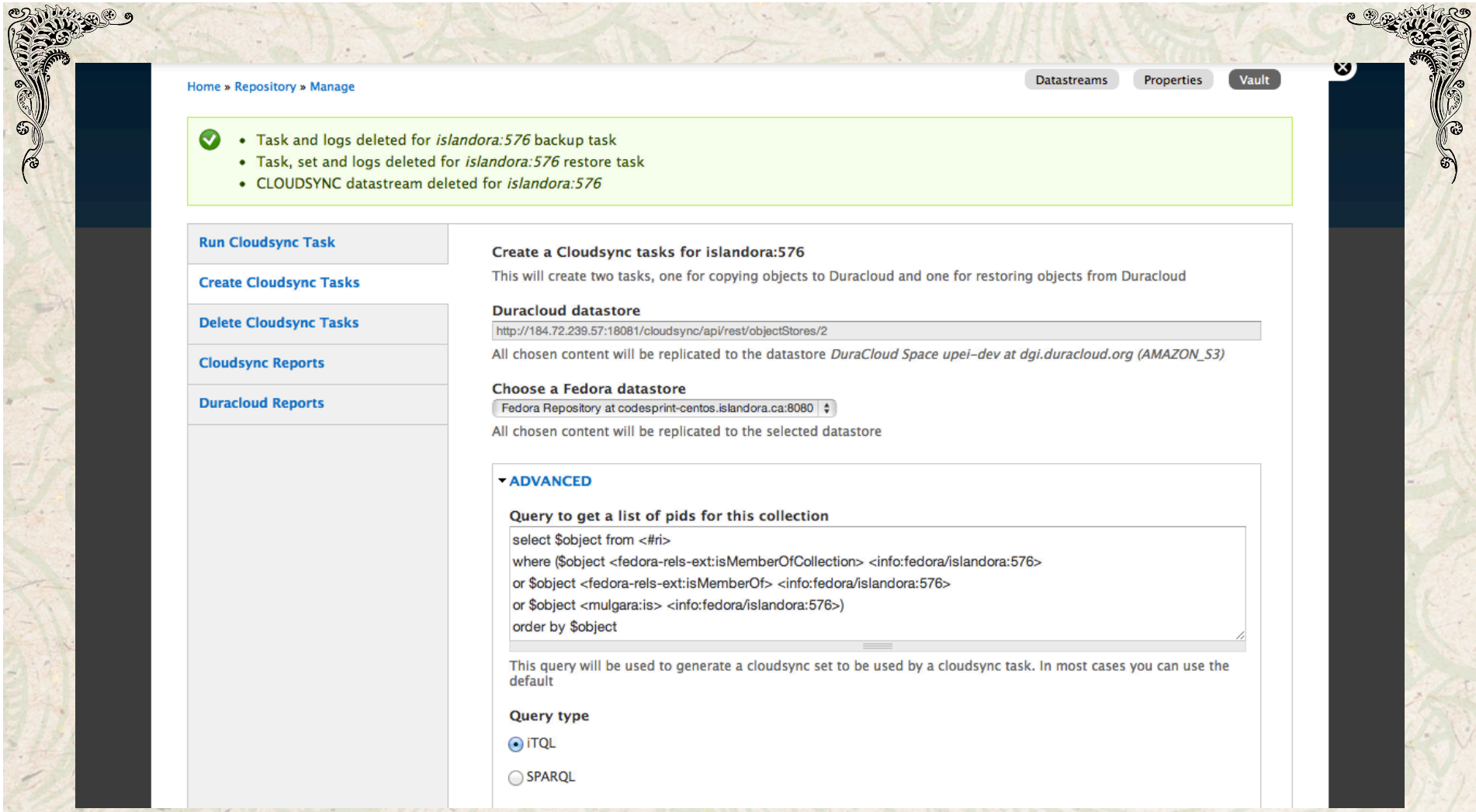


Object Restore

DiscoveryGarden



Reports

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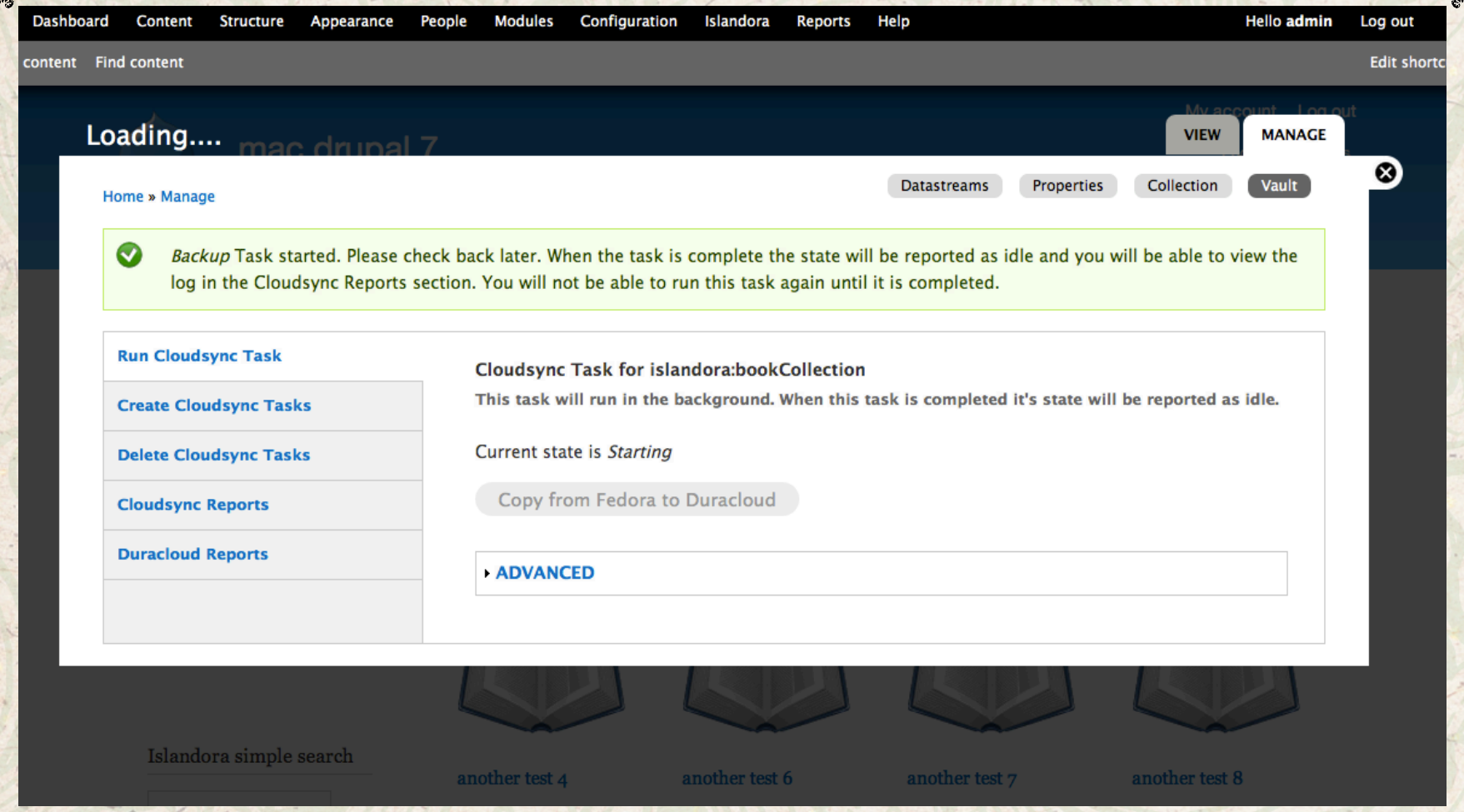

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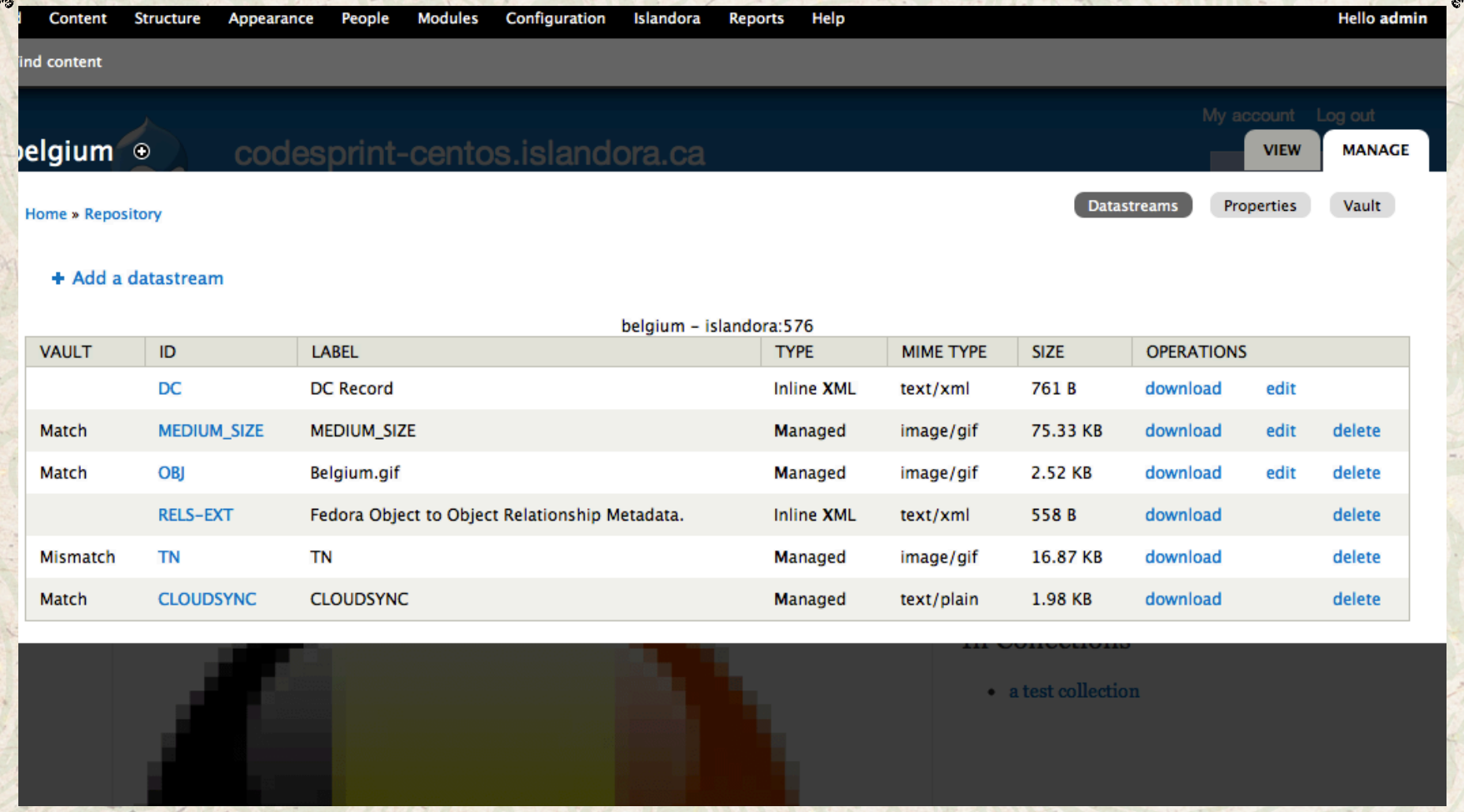

DiscoveryGarden

Next Steps

- Tighter integration and more UI functions
- Automated recovery
- Full Fedora/Collection restore
- Support for private DuraCloud instances

Kindura:

Hybrid Cloud Repository

12th July 2012

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Centre for e-Research
King's College London

Jens Jensen
Roger Downing
Cheney Ketley

Science and Technology Facilities Council

Kindura Project

JISC

- Project in JISC Flexible Service Delivery Programme
- Kindura was an exploratory project
  - Determine requirements
  - Proof-of-concept content repository
  - Case study to document issues (technical, cost, legal etc.)
  - 9 months 01/02/11 to 30/11/11

KING'S College LONDON

Science & Technology Facilities Council

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Problem description

- Ad hoc storage of research outputs (data, documents)
  - Data stored on PCs, portable drives, USB sticks, local servers, ...
  - Little or no provision for backup and disaster recovery
- Changing landscape
  - UK funders requiring retention of data for 10+ years
  - Journals need supporting data to be available for scrutiny
- Limited support from central IT departments for research data management tools
  - Long lead times to deploy storage

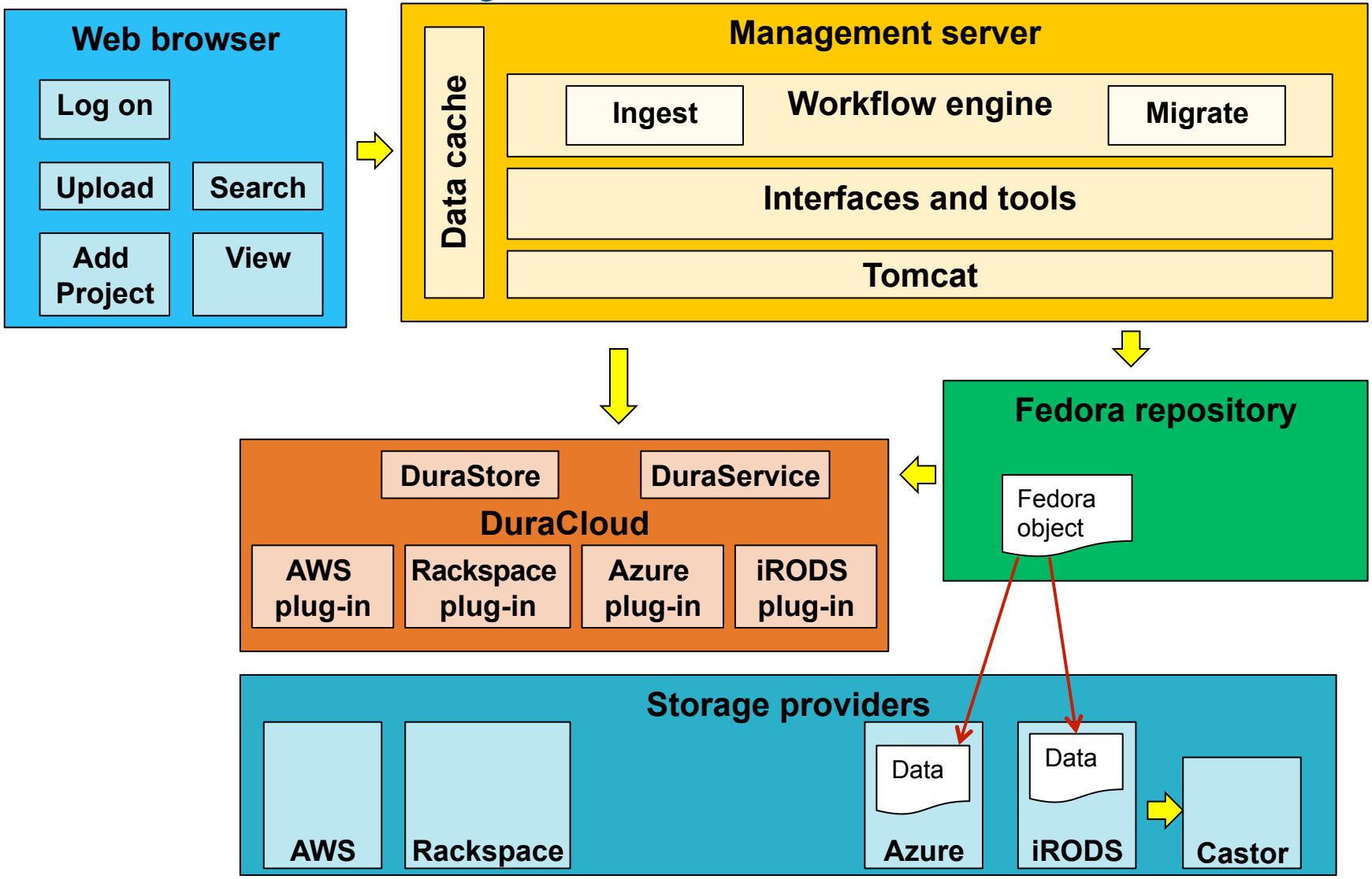
Hybrid cloud solution

- Commercial cloud offers many potential benefits
  - Elasticity, rapid deployment, transparent costs
- Risks of commercial cloud
  - Data sensitivity, data protection laws, service availability or loss
- In house storage
  - Fully under internal control, inflexible
- Hybrid solution – combine commercial cloud and internal storage
  - Provides elasticity as well as flexibility to retain certain data types in house
  - Allows reuse of existing storage resources
  - Higher complexity

Kindura

- Proof-of-concept repository for research data combining
  - Commercial cloud
  - Internal storage – iRODS
- Based on Fedora Commons
- DuraCloud provides a common storage interface
  - Deployed DuraCloud from source code
- Developed a storage management framework
  - Based on policies, legal and technical constraints, cost
  - Automated decisions for storage and migration
  - Content replication across storage providers for resilience
  - Storage providers transparent to user
  - Provide cost optimisation

Kindura system



Further Information

Project blog:

http://kindura.cerch.kcl.ac.uk

Contact:

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Where can I find out more?

Web site:
www.duracloud.org

Email:
csmith@duraspace.org

Contact Carissa Smith if interested in a live DuraCloud demo session.

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