

DuraCloud for Research Project Update

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DuraSpace

CNI Spring Meeting 2013

**DuraCloud for Research (DfR)
was funded by**

**The Alfred P. Sloan
Foundation**

The Problem



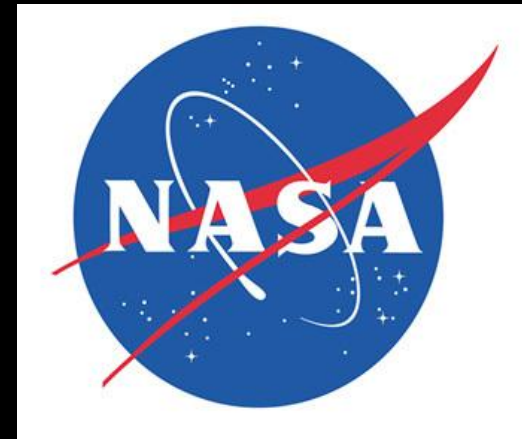
It's Gone Forever!





DURACLOUD™

DMP Mandates



The Proposal

Provide value beyond that of commodity cloud vendors

- Secure storage and preservation from a trusted non-profit
- Support the researcher/curator partnership
- Emphasis on metadata, specific services for researchers

Workshop

Advisors and Participants

Cornell

George

Washington

Georgia Tech

Harvard

ICPSR

Johns Hopkins

MIT

NCAR/UCAR

Oregon State

Rice

Smithsonian

U of Oregon

U of Prince Edward

Island

U of Virginia

Fluid Project

DuraSpace

DuraCloud for Research

- ✓ Project data safely backed up at the source
- ✓ Metadata captured and enhanced
- ✓ Cloud-based services for management, analytics
- ✓ Partnership with data managers/curators
- ✓ Preservation in the cloud

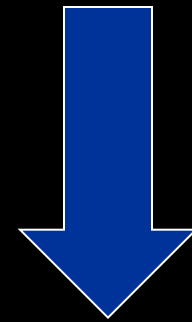
DfR Principles



- Open source, enterprise software solution
- Capture data close to the source
- Don't interfere with researchers' processes
- Provide incentives, added value for metadata creation
- Easy to use; workflows for collaboration, hand-off to institution

Warning

**Anticipated difficulty engaging
researchers to do this**



Low Medium High

The Plan

1. Develop an
architectural proof-
of-concept

2. Work with researchers to develop User Interfaces for Data Capture and Data Management

3. Refine through iteration

4. Explore economic models

Outcomes

1. Comprehensive collection of Use Cases

2. Partnerships with Smithsonian Institution Office of Research Support and Discovery Garden, LLC

3. Successful
infrastructure based on
DuraCloud, Fedora,
Sidora, and a host of open
source components

4. Federated authentication using Shibboleth

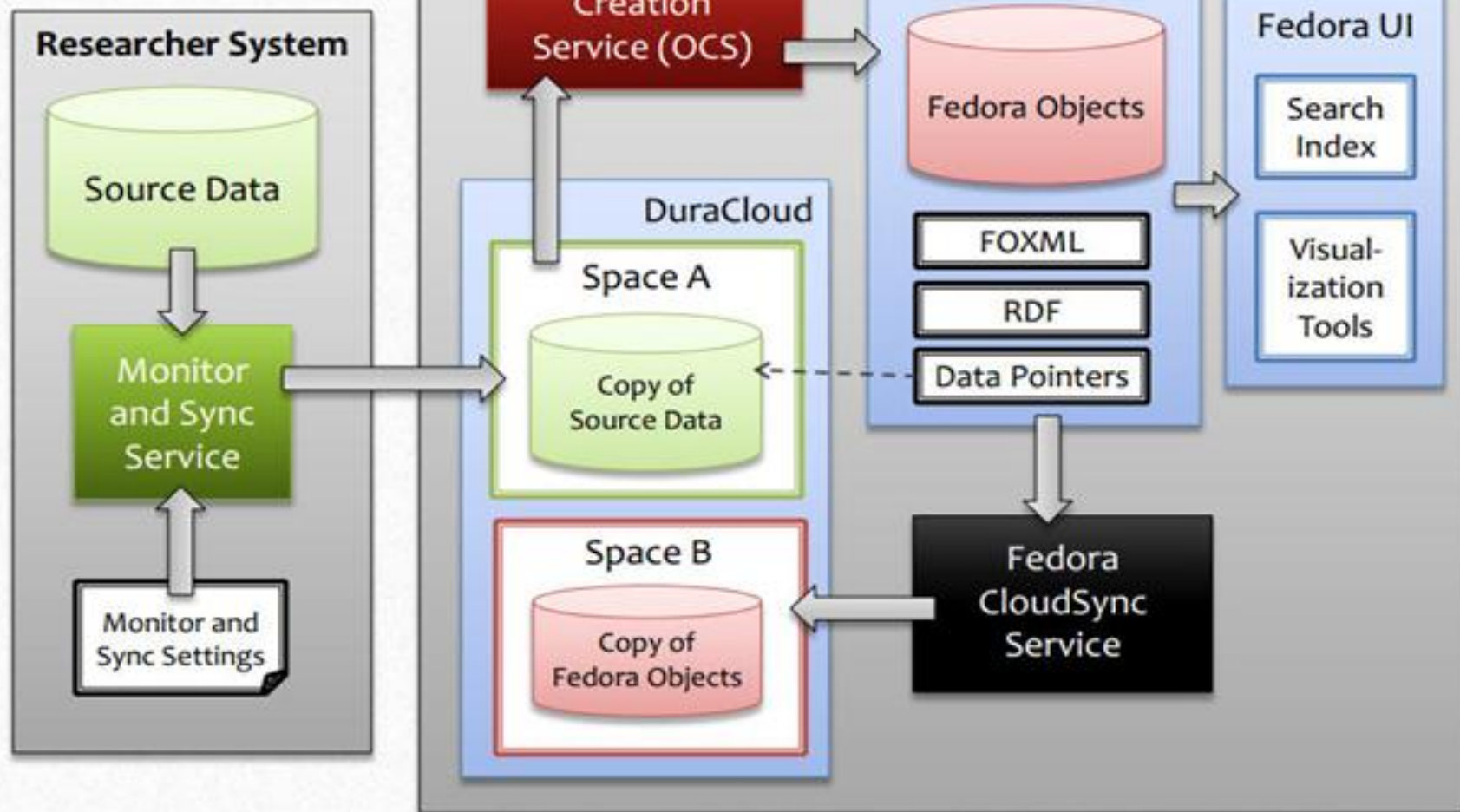
5. Reusable execution environment for pluggable services

6. Successful metadata extraction and creation

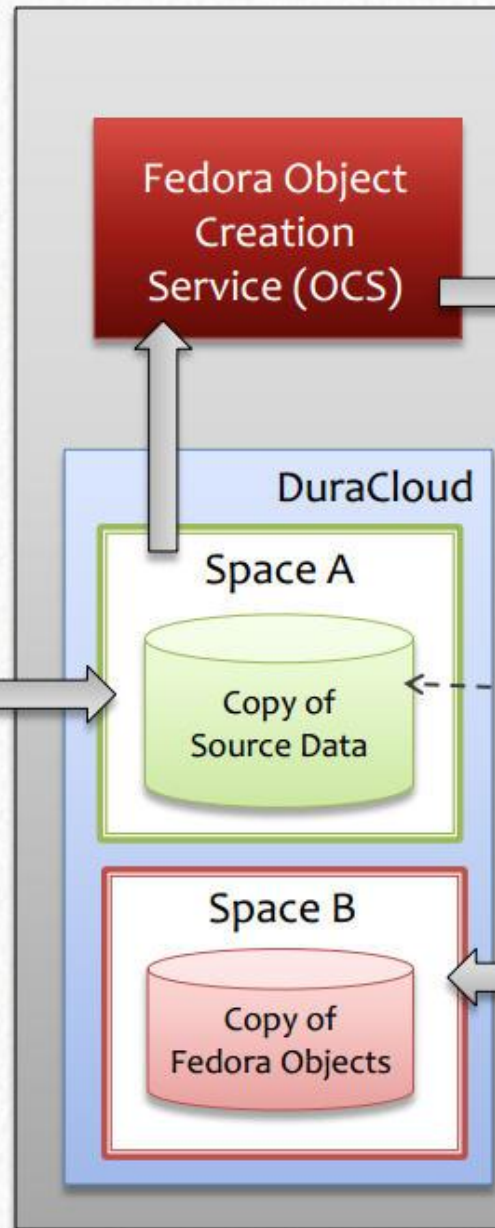
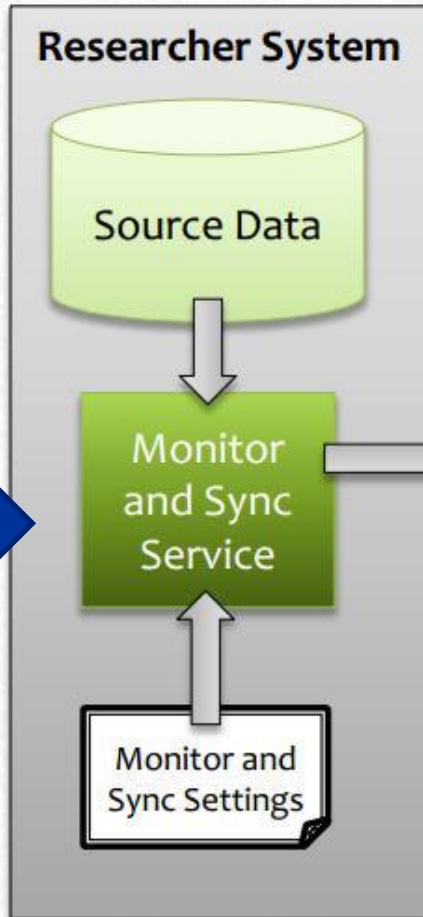
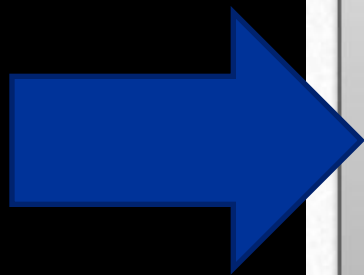
7. All code is open source and available for reuse.

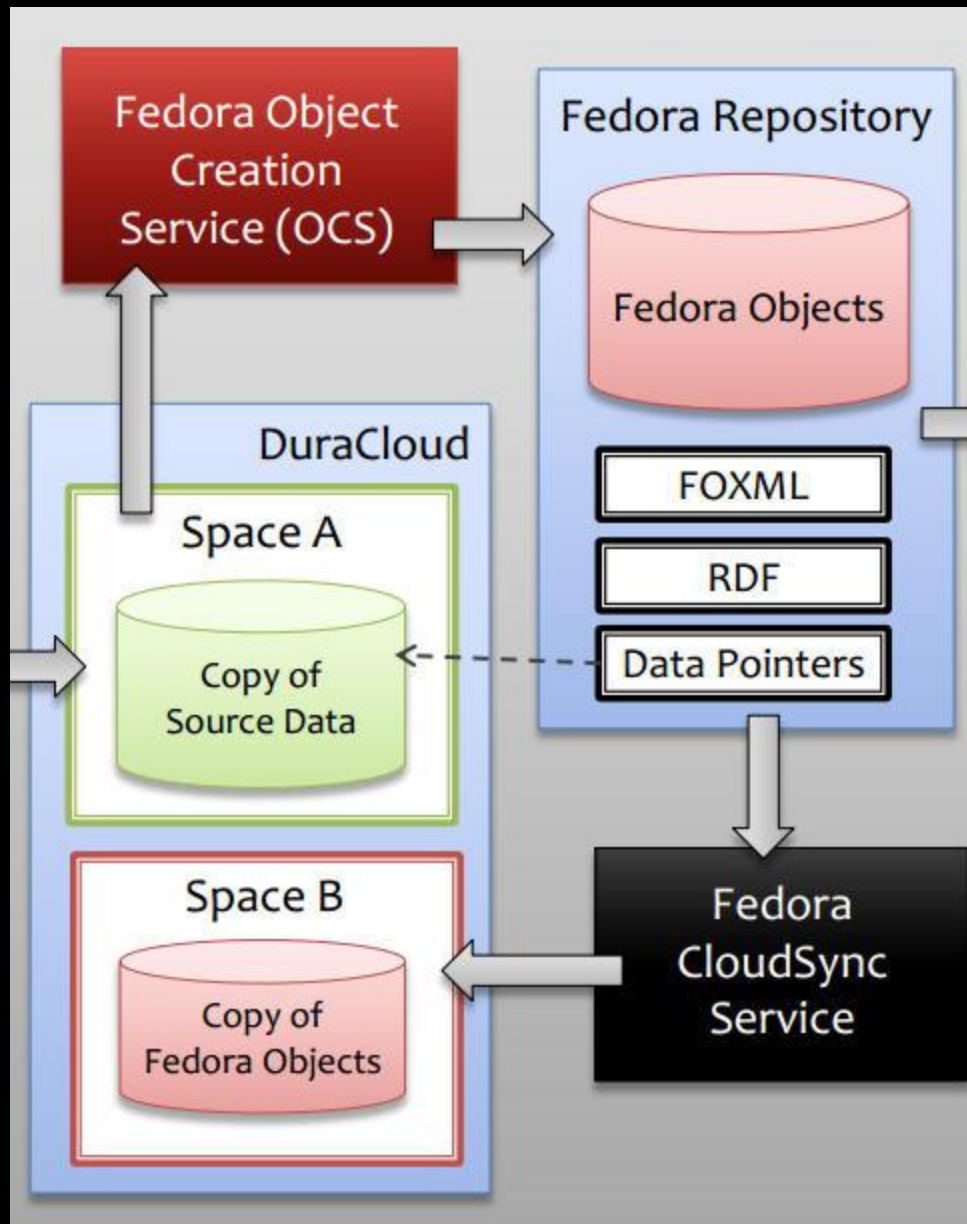
The DfR Architecture

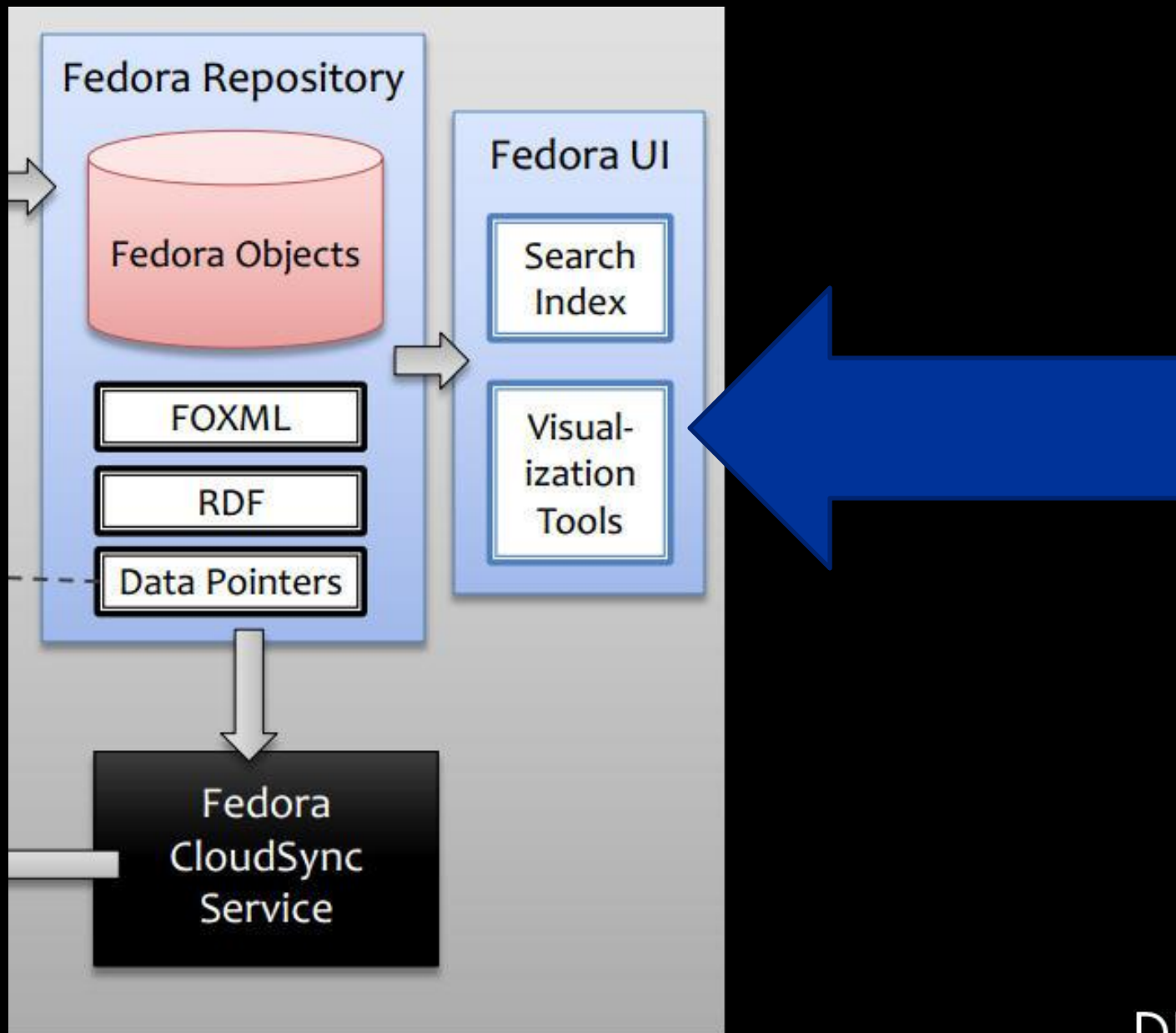
DuraCloud for Research Architecture Sketch



DuraCloud for Research Architecture Sketch







The End User Application



JJM-M4500 > DuraCloud for Research > Cerro_Juan_Diaz > Images

File Edit View Tools Help

Organize ▾ Include in library ▾ Share with ▾ Slide show Burn New folder

- ▶ JJM-M4500
 - ▶ .amu
 - ▶ .ResophNotes
 - ▶ .swt
 - ▶ .VirtualBox
 - ▶ AppData
 - ▶ Contacts
 - ▶ Desktop
 - ▶ Downloads
 - ▶ DuraCloud for Research
 - ▶ Cerro_Juan_Diaz
 - ▶ Docs
 - ▶ Images
 - ▶ Spreadsheets
 - ▶ Favorites
 - ▶ Google Drive
 - ▶ Links



Artifact_Predictin
g_End_of_the_Wo
rld_on_11-06-201
2.jpg



JJM-M4500 > DuraCloud for Research > Cerro_Juan_Diaz > Docs

File Edit View Tools Help

Organize ▾ Include in library ▾ Share with ▾ Burn New folder

Homegroup

JJM-M4500

.amu

.ResophNotes

.swt

.VirtualBox

AppData

Contacts

Desktop

Downloads

DuraCloud for Research

Cerro_Juan_Diaz

Docs

Images

Spreadsheets

Favorites

Google Drive

Name

Looter Sites - Spanish Lang.swf

File Explorer address bar: JJM-M4500 > DuraCloud for Research > Cerro_Juan_Diaz > Spreadsheets

File Explorer menu bar: File Edit View Tools Help

File Explorer toolbar: Organize Include in library Share with Burn New folder

- Homegroup
- JJM-M4500
 - .amu
 - .ResophNotes
 - .swt
 - .VirtualBox
 - AppData
 - Contacts
 - Desktop
 - Downloads
 - DuraCloud for Research
 - Cerro_Juan_Diaz
 - Docs
 - Images
 - Spreadsheets
 - Favorites
 - Google Drive

| Name |
|-------------------------------|
| List of Looted Artifacts.xlsx |



▶ JJM-M4500 ▶ My Documents ▶ My Dropbox ▶ Cerro Juan Diaz Dropbox

File Edit View Tools Help

Organize ▼ Include in library ▼ Share with ▼ Slide show Burn New folder

- ▶ Dell WebCam Central
- ▶ doc
- ▶ ebooks
- ▶ Galaxy Vintage D
- ▶ Manuals
- ▶ My Digital Editions
- ▶ My Dropbox
- ▶ My Google Docs
- ▶ My Stationery
- ▶ Native Instruments
- ▶ Outlook Files
- ▶ Quicken
- ▶ Reflect
- ▶ Samsung



Looter Pit.jpg

Repository Home

Advanced Search


Help

HOME

Duraspace Repository

Projects



- ▶  Cerro Juan Diaz (25)
-  Imported Objects

Welcome!

Welcome to the Duracloud for Research Sync Tool

Once set up, this application will automatically backup your vital digital files to multiple cloud storage providers, thus ensuring your data is always accessible and secure.

[Continue](#)



Select Space

Select a destination space for your content.

Space Name

Next

Cancel

Add Directory

Select a directory by clicking on the file tree below and click 'Add'

Select Path



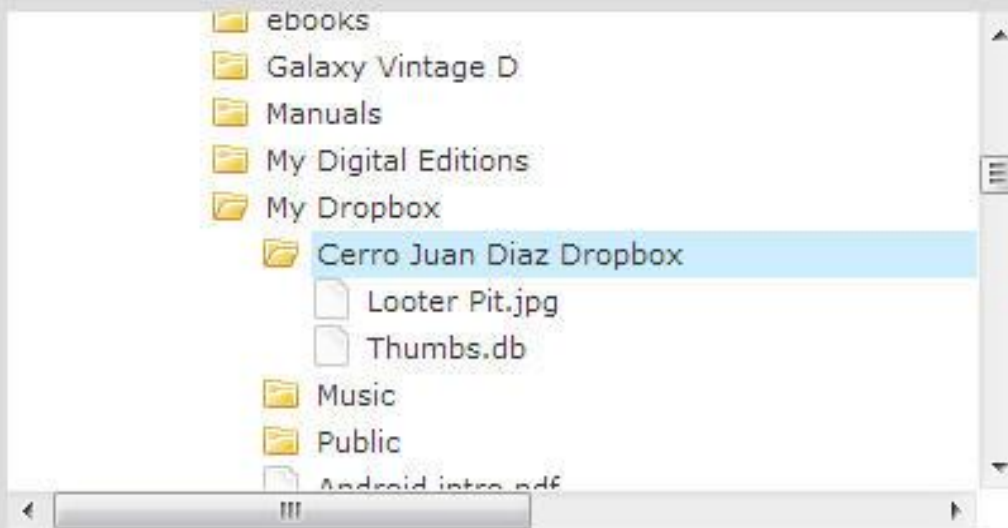
Add

Cancel

Add Directory

Select a directory by clicking on the file tree below and click 'Add'

Select Path



Add

Cancel

Directories

To add one or more directories, click the 'Add' button below. When you are finished, click 'Next' to continue with the setup.

Add Directory or Files

C:\Users\JJM-M4500\DuraCloud for Research\Cerro_Juan_Diaz/

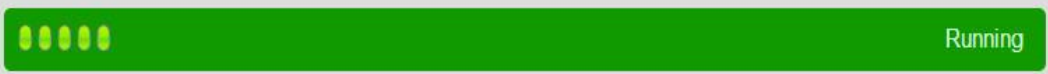
C:\Users\JJM-M4500\Documents\My Dropbox\Cerro Juan Diaz Dropbox/

Next

Cancel

Overview

Stop Start Pause Resume



| | |
|--------------|------------------------------|
| Sync Started | Mon Apr 01 17:54:18 EDT 2013 |
| Queue Size | 5 |
| Error Count | 0 |

Active Syncs

There are no active uploads at this time.


Recent Activity

| | | |
|--|--|--|
| | | |
|--|--|--|

Queued for Synchronization (5) Errors

| File Path | Size | Last Modified |
|---|----------|---------------|
| C:\Users\JJM-M4500\DuraCloud for Research\Cerro_Juan_Diaz\Docs\Looter Sites - Spanish Lang.swf | 4.7 MB | 12/06 |
| C:\Users\JJM-M4500\DuraCloud for Research\Cerro_Juan_Diaz\Images\Artifact_Predicting_End_of_the_World_on_11-06-2012.jpg | 249.3 KB | 11/28 |
| C:\Users\JJM-M4500\DuraCloud for Research\Cerro_Juan_Diaz\Spreadsheets>List of Looted Artifacts.xlsx | 9 KB | 11/28 |
| C:\Users\JJM-M4500\Documents\My Dropbox\Cerro Juan Diaz Dropbox\Looter Pit.jpg | 224.8 KB | 11/28 |
| C:\Users\JJM-M4500\Documents\My Dropbox\Cerro Juan Diaz Dropbox\Thumbs.db | 21.5 KB | 04/01 |

Overview Stop Start Pause Resume

 Waiting

| | |
|--------------|------------------------------|
| Sync Started | Mon Apr 01 17:54:18 EDT 2013 |
| Queue Size | 0 |
| Error Count | 0 |

Active Syncs

There are no active uploads at this time.

Recent Activity

| File (hover over name for full path) | Size | Duration | Completed |
|--|----------|----------|-------------------------|
| Looter Sites - Spanish Lang.swf | 4.7 MB | 21 secs | 04/01/2013 17:54 PM EDT |
| Thumbs.db | 21.5 KB | 1 sec | 04/01/2013 17:54 PM EDT |
| Looter Pit.jpg | 224.8 KB | 1 sec | 04/01/2013 17:54 PM EDT |
| Artifact_Predicting_End_of_the_World_on_11-06-2012.ino | 249.3 KB | 2 secs | 04/01/2013 17:54 PM EDT |

Queued for Synchronization (0) Errors

There are no files currently queued for synchronization.

Spaces

- cerro-juan-diaz
- danny-test
- dfr-test1234
- fedora-objects
- public
- researcher-data
- temp1353004211131
- temp1355863219410
- temp1363989332015
- test-content
- x-duracloud-admin
- x-service-out

Content Items

Showing 1 - 5 of 5

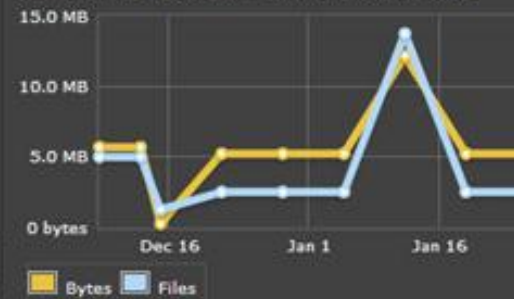
- Docs/Looter Sites - Spanish Lang.swf
- Images/Artifact_Predicting_End_of_the_World_on_11-06-2012.jpg
- Looter Pit.jpg
- Spreadsheets/List of Looted Artifacts.xlsx
- Thumbs.db

Space Detail

cerro-juan-diaz

Streaming: On Off

Cumulative Byte and File Counts Over Time



Mime Types as of Mar 29, 2013



File Size

Total: 0.01GB



File C

Total

Repository Home

Advanced Search








Help

HOME

Duraspace Repository

Projects



- ▷  Cerro Juan Diaz (25)
- ▾  Imported Objects (5)
 - ▷  Docs (1)
 - ▷  Images (1)
 -  Looter Pit.jpg
 - ▷  Spreadsheets (1)
 -  Thumbs.db

Duraspace Repository

Projects



- ▷ Cerro Juan Diaz (25)
- ▲ Imported Objects (5)
 - ▷ Docs (1)
 - ▲ Images (1)
 - Artifact_Predicting_End_of_the_World
 - Looter Pit.jpg
 - ▷ Spreadsheets (1)
 - Thumbs.db

Concept Overview

Resources

Viewer



Manage



Duraspace Repository

Projects

- ▶  Cerro Juan Diaz (25)
- ▶  Imported Objects (5)
 - ▶  Docs (1)
 - ▶  Images (1)
 -  Artifact_Predicting_End_of_the_World...
 -  Looter Pit.jpg
 - ▶  Spreadsheets (1)
 -  Thumbs.db

Concept Overview
Resources
Viewer
Manage
 [Edit Permissions](#)
 [Purge Object](#)
Object Properties

Label:

Owner:

State: A

Date Created: 2013-04-01T21:52:36.951Z

Last Modified: 2013-04-01T21:52:36.951Z

Datastreams
 [Add](#)
 [Remove](#)
 [Edit](#)
 [Download](#)
 [View](#)

| ID | Label | State | Mime Type | Date Created |
|-------------------|----------------------------|-------|---------------------|------------------------|
| COLLECTION_POLICY | Collection Policy | A | text/xml | 2013-04-01T00:00:00... |
| DCOM | DCOM Record | A | text/xml | 2013-04-01T00:00:00... |
| LIDO | LIDO Record | A | text/xml | 2013-04-01T00:00:00... |
| OBJ | Artifact_Predicting_End... | A | image/jpeg | 2013-04-01T00:00:00... |
| RELS-EXT | RDF Statements about ... | A | application/rdf+xml | 2013-04-01T00:00:00... |
| DC | Dublin Core Record for ... | A | text/xml | 2013-04-01T21:52:36... |

Duraspace Repository

Projects

- ▶ Cerro Juan Diaz (25)
- ▲ Imported Objects (5)
 - ▶ Docs (1)
 - ▲ Images (1)
 - Artifact_Predicting_End_of_the_Work
- Looter Pit.jpg
- ▶ Spreadsheets (1)
- Thumbs.db

Concept Overview

Resources

Viewer

Manage

```
<?xml version="1.0"?>
<dcom>
  <content-file-created>2012-11-28T14:42:08.008</content-file-created>
  <content-file-modified>2012-11-28T13:03:14.014</content-file-modified>
  <content-checksum>5687f791f74ed1b490fe9d43acfd76ea</content-checksum>
  <content-file-path>C:\Users\JJM-M4500\DuraCloud for
Research\Cerro_Juan_Diaz\Images\Artifact_Predicting_End_of_the_World_on_11-06-
2012.jpg</content-file-path>
  <content-mimetype>image/jpeg</content-mimetype>
  <content-file-last-accessed>2012-11-28T14:42:08.008</content-file-last-accessed>
  <content-modified>2013-04-01</content-modified>
  <content-size>255263</content-size>
  <creator>dfrtest</creator>
</dcom>
```

Duraspace Repository

Projects ⏪

Concept Overview Resources Viewer **Manage**

Edit Permissions Purge Object

Object Properties

Label:

Owner:

State: A

Date Created: 2012-09-25T19:31:30.213Z

Last Modified: 2012-11-06T18:39:40.428Z

Save Changes

Datastreams

Add Remove Edit Download View

| ID | Label | State | Mime Type | Date Created |
|-------------------|--------------------------|-------|-----------|----------------------|
| RELS-EXT | Fedora Object-to-Obje... | A | text/xml | 2012-11-06T18:39:40. |
| EAC-CPF | EAC-CPF Record | A | text/xml | 2012-11-06T18:39:39. |
| DC | Dublin Core Record | A | text/xml | 2012-11-06T18:39:40. |
| COLLECTION_POLICY | Collection Policy | A | text/xml | 2012-09-25T19:31:30. |

- Cerro Juan Diaz (25)
 - Looter pits (1)
 - Operation 1
 - Operation 2
 - Operation 21-2
 - Operation 3 (9)
 - Intermediate zone
 - More Kinds of Stuff
 - Second burial horizon
 - Stone-walled "ovens"
 - Sub-oven graves (6)
 - Upper shell-bearing midden (1)
 - Operation 31
 - Operation 3B
 - Operation 4 (1)
 - Operation 5
 - Operation 6
 - Operation 7
 - Operation 8
 - Still more stuff 1
 - Test Expedition - edit 2 (1)
 - Test Lido - edit 2
 - Test Natural History Collection - edit 2
 - Test Organization - edit 2 (1)
 - Test Person - edit 2 (1)
 - Test Plot - edit 2
 - Test Project Nov 6 - edit 2 (4)
 - Test plant/ animal species - edit 2
 - Test123 Camera Trap -edit 2

Resources

Limit by type

[All](#) | [Images](#) | [PDF](#) | [Text](#) | [CSV](#) | [Video](#)

Results per page

10 | [15](#) | [20](#) | [25](#) | [30](#)

Showing 1 - 3 of 3

| Title | Metadata | View | Type | Download |
|--|----------------------|--|---|--------------------------|
| General location of Panama | view |  |  | download |
| Map showing the relationship of Cerro Juan Diaz (LS-3) to other archaeological sites identified by Isaza in the lower La Villa v | view |  |  | download |
| simplemap.jpg | view |  |  | download |

Happy Researchers!



SPACE

Back to the real
world...

Challenges

1. Not enough
researchers!

2. Broader scope
necessitated by
“enterprise
perspective”

3. Maturing market

4. Not enough resources

5. UI compromises

Next Steps

Success factors for
future development:

Committed institutional partners bringing

- Researchers
- Research Administrators
- Library/curation staff
- Information Technology Dept

More partnerships bringing

- Complementary services
- Additional resources

“Lean Startup”* product development methodology

- Frequent feedback
- Market testing
- Constant learning cycle

*Eric Ries

Continued feature development

- Fine-grained access control
- Two-way sync
- Versioning
- Etc.

Contact

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Questions