The Islandora Digital Repository Infrastructure at the University of Limerick

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Outline of Today’s Talk

• The Digital Library at UL
• Islandora Overview
• Digital Library in Context of UL ITD storage infrastructure
Background

- UL Institutional Repository
- Special Collections Material/ Purchase of Digitisation Equipment
- Strategic Direction of Library Services
Strategic Role of the Digital Library

- Research Profile
- Unique and distinctive collections
- Building innovative services
The Infrastructure in the University’s IT Context

- Drupal infrastructure
- Virtual Server Infrastructure
- Storage Infrastructure
Selecting a Repository Infrastructure

- Extensible, flexible, long-term system
- Usability: staff and end-users
- Community support
Islandora

• Developed @ UPEI (2007)
• Core team at discoverygarden/UPEI Library, community
• Digital asset management
What is Islandora

• Drupal+Fedora+Other OS = ecosystem
• Flexible UI on top of Fedora + other apps
• Support for 180+ languages via Drupal
• Focus on robust preservation features and services + flexibility in data models and UI
• VM/code, documentation, discussion lists, training Camps
Islandora and OAIS

DIGITAL ASSET MANAGEMENT
Islandora Ecosystem Lifecycle
Islandora Workflows
Fedora Commons - Content Model Architecture

- Fedora Object Model
  - Flexibility supports any data model, any metadata schema and any data type
  - Atomistic and compound objects
  - Support for RDF allows integration of specific ontologies
Workflows

- Multiple Staff in multiple areas
- Varying Sets of granular rights
- Easily enforce who can do what to digital objects in the context of the specific collection.
Security

- Fine-grained control of access to data
- User-based access to manage/view
- Role-based access to manage/view
- Controls can be applied at Drupal/Fedora
- Data could be in external encrypted FS
Digital Preservation

- Fedora provides robust service framework
- TechDS+DescDS+RightsDS+AuditDSs to a PREMIS record
- Adding DuraCloud support via “Vault”
- Option to integrate archival management software as an optional preservation component
Solution Packs

- Image, Large Image, Audio, Video, Book, PDF, Newspaper, WARC

- Includes MODS form, DC mapping, sample data, viewer(s), TechMD extraction, etc.

- Solution Pack module makes it easier to create new ones, modify existing
ITD Storage

- Large storage requirement for the Digital Library
- Tender process to replace storage
- Library participated as a primary stakeholder
Layers 2-5 should be spread over the North and South sites.
Storage Layout High Level View

South Side Array 1
- 15,10K SAS
- VNX5100

South Side Array 2
- 15,10K SAS
- VNX5300

South Side Array 3
- 7.2K SATA II
- VNXe3150

North Side Array 1
- 15,10K SAS
- VNX5100

North Side Array 2
- 15,10K SAS
- VNX5300

North Side Array 3
- 7.2K SATA II
- VNXe3150

100 TB of Raw Disk Space in each site
- 35 TB 15K SAS
- 35 TB 10K SAS
- 30 TB 7.2K SATA II
Extra Storage Shelf included on each box

SQL Mirror / Data Guard/ VM Rep

Data Guard / VM Rep

Async Mirror / VM Rep

Option of extra servers for Test / Train & Dev

Data Guard

Notes
Active / Active
4 mid level storage Boxes
2 Entry level arrays
Student Records System Storage / VM’s Layout

**South Side VNX5100**

- **V51S_Pool1_900GB_10K**
- **DS_V51S_SI_10K_1.6TB**
- **Free Space**

  **Servers**
  - XI1,SitsApp1
  - XI2,SitsApp2
  - Digitary
  - Discoverer
  - XI3,SitsApp3
  - Web Server
  - Signer
  - LB

- **V51S_Pool2_600GB_15K**
- **DS_V51S_HR_15K_2.25TB**
- **Free Space**

- **V51S_Pool3_900GB_10K**
- **DS_V51S_GENERAL1_10K_2TB**
- **DS_V51S_Research&Web_10K_1TB**
- **Free Space**

**North Side VNX5100**

- **V51N_Pool1_900GB_10K**
- **DS_V51N_SI_10K_1.6TB**
- **Free Space**

  **Servers**
  - XI4,SitsApp4
  - XI5,SitsApp5
  - Digitary (CL)
  - Discoverer (CL)
  - XI6,SitsApp6
  - Web Server
  - Signer (CL)
  - LB (CL)

- **V51N_Pool2_600GB_15K**
- **DS_V51N_HR_15K_2.25TB**
- **Free Space**

- **V51N_Pool3_900GB_10K**
- **DS_V51N_GENERAL1_10K_2TB**
- **DS_V51N_Research&Web_10K_1TB**
- **Free Space**
Storage - Digital Lab

- Primary production site of content
- A0 scanner, book scanner, digital
- AV Facilities in the works
Backup Infrastructure

- Commvault based backup strategy:
  - Nightly incremental backup to disk, weekly full; to disk then flushed to tape every week
  - Mirrored disks
  - Will implement cloud-based backup
Dark Archive

- Facilitated University request to manage and provide access to high use, confidential material
- Provided valuable services
- Accessible only on private, restricted network
Future Plans

- Research Data
- IR
- Linked data
- Cloud-based backup, storage?
Questions?

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