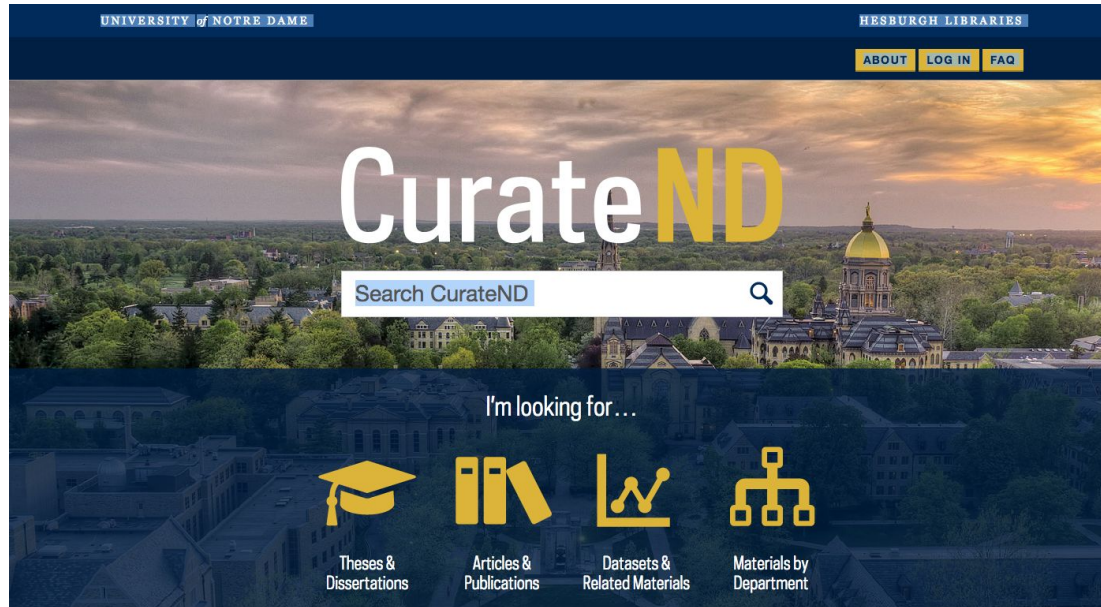


Integrating High-Latency Storage with Samvera

Don Brower
University of Notre Dame

Samvera Virtual Connect, July 2017

- Institutional Repository formally launched Feb. 2015
- Built using the *curate* gem



Our institution has a tape library system.

- We have access to 250 TB of storage
- But content on tape can take minutes to retrieve

Goals

- Use tape for preservation storage
- Integrate tape system with our Samvera application
- Allow patrons to get items from tape on demand without human intervention
- Change as little as possible of the existing web application

Strategy

- Make a "preservation layer" to manage the tape system, versioning, and fixity checking.
- Use our batch ingest system to put content onto tape
- Make targeted changes to Samvera app where needed

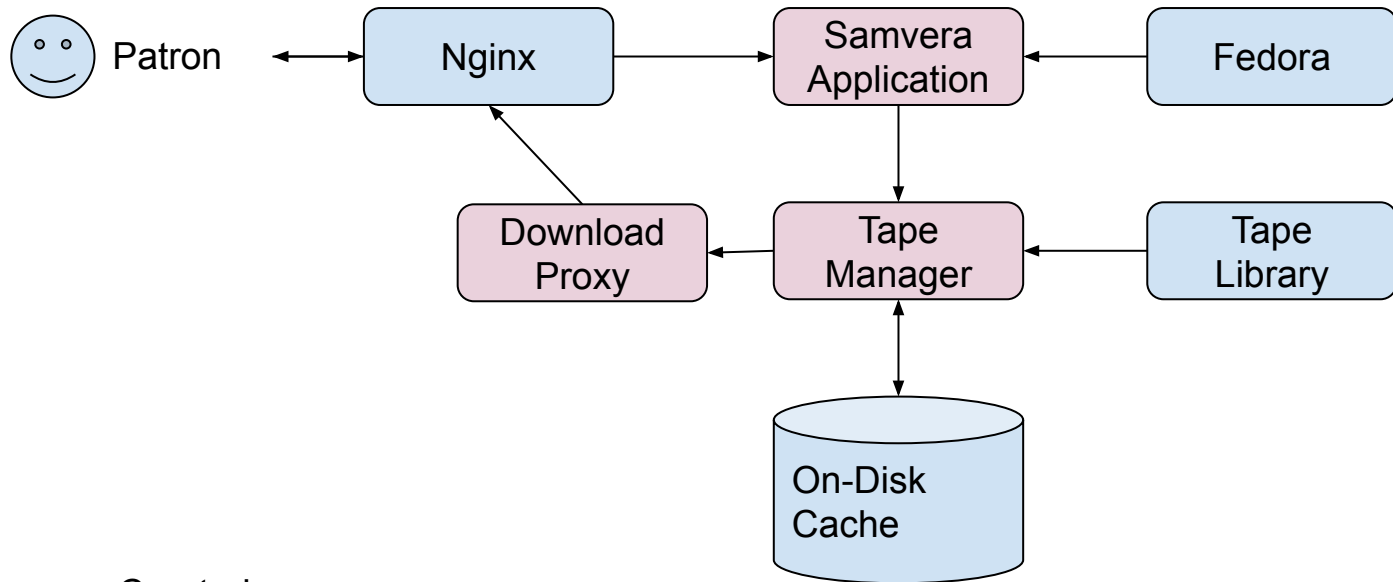
Fedora

- Maintain current use as object registry. Used by access and discovery layers
- Holds copy of metadata (descriptive, access, technical)
- Uses R datastreams to point to URL for file content

Tape Manager

- Very simple semantics: only sees bitstreams
- Assigns a unique URL to each version of each file
- Does fixity checking
- Keeps own disk cache of content stored on tape
- Store a serialization of each Fedora object on tape

Architecture



Red = Things we Created

Changes to Samvera Application Itself

- Display cache status on item show pages
- New “Download Waiting” page
- Send item updates and edits back to tape store (via cron job)
- Turn off some default background jobs, such as fixity checking

Item Page

Teotihuacán: Architectural sculpture in the shape of an abstracted form of the feathered serpent



Description

The Copacauan site in the Mexican Centro highlands, it was the region's pre-eminent city during the Late Preclassic period (c. 1000 BCE–AD 200). One of the most important archaeological sites, with a population estimated at up to 200,000 in the 6th century AD, Teotihuacán was the largest and most productive city in the Pre-Columbian Americas and one of the most important in the world. The region of Teotihuacán was similar to those of other Mesoamerican cultures. Many of the most important sites were excavated, including the Feathered Serpent (the Aztec Quetzalcoatl) and the Pyramid of the Sun (1900). The architectural style is a blend of the styles of Teotihuacán, including in the 6th century, when the center of the city was abandoned, and it is, according to archaeological sources, the population dispersed. Some sources indicate that the site was known in the Aztec era as a place of religious pilgrimage and myth.

Attributes

Attribute Name	Value
Creator	G. Hovind & Co.
Subject	Classical art Quetzalcoatl Architecture
Date Created	1000-1500
Date Digitized	2007-01-01
Cultural Context	Mesoamerican
Place of Creation	Classical Mesoamerican period 1000-1500 AD Teotihuacán, Mexico, ca. 50 km northeast of Mexico City Teotihuacán
Departments and units	University of Notre Dame Herborg Libraries General
Member of	Archival Commons Data of Mine
Temporal Coverage	before or circa 1910
Access Rights	View Rights

Files

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Download

View Details

- *Download* button to get content
- These three files are cached on disk and can be downloaded without delay

Files

Please Note: You may encounter a delay before a download begins. Large or infrequently accessed files can take several minutes to retrieve from our archival storage system.

image_3753.xml

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Open Access



Begin Download

View Details

Mexico-Chichen-Itza-Cross-Questzacoatt.jpg

Open Access



Download

View Details

- “Please Note”
- The "Begin Download" button indicates a file needs to be retrieved from tape.
- Caching is at the file level (not item level)

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Future

- Will port this to Hyrax as part of our Hyrax migration
- Use Fedora 4 instead of Fedora 3
- Abstract the tape manager API as a general “file store”?
Useful to others? Maybe S3 or other cloud storage interface?

Thank You

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Github: https://github.com/ndlib/curate_nd

<https://github.com/ndlib/bendo>