Building the Hydra Together
Enhancing Repository Provision through Multi-Institutional Collaboration

Thank you.
BUILDING THE HYDRA TOGETHER

Enhancing Repository Provision through Multi-Institution Collaboration
The Quest for the Hydrá
• Isolated institutions alone in the repository wilderness
• Hull, Virginia, Stanford
• Each looking to manage and share digital content
• They met in the town of Fedora (now twinned with DSpace across the river)
• Brought together by the Grand Vizier, Thorny Staples, then of Fedora Commons
Identified a common aim
A reusable framework for multipurpose, multifunction, multi-institutional repository-enabled solutions.
Identified a common aim

and principles
No single institution can resource the development of a full range of digital content management solutions on its own, …yet each needs the flexibility to tailor solutions to local demands and workflows.

No single system can provide the full range of repository-based solutions for a given institution’s needs, …yet sustainable solutions require a common repository infrastructure.
A baseline from which others can develop
One body, many heads
The Quest for the Hydra
• A 3-year quest, initially, started in September 2008
• Each partner working together towards their own view(s) of the Hydra built on a common foundation
Provisions
None, other than what we could bring ourselves.

Make it easy for others to join the quest.

Safety in numbers.
Each can bring their own insights and capabilities.
Multiple routes to getting involved.
Provisions

- None, other than what we could bring ourselves
Except spudnuts and curry
Doing the quest because we want to
• starting with community
MediaShelf
Make it easy for others to join the quest

- Safety in numbers
- Each can bring their own insights and capabilities
- Multiple routes to getting involved
Our journey has passed by other
mosquito environments:
- Some strong, some not so stable
- Manipulating an input of resource

Not the first to make this journey

Seeking clarity from a
pooleed, common approach

Pools of Solomon © The Fitzwilliam Museum.
Not the first to make this journey
Our journey has passed by other repository environments
- Some strong, some not so stable
- Many using up lots of resource
Seeking clarity from a pooled, common approach
Our journey has passed by other
insecurity environments:
- Some strong, some not so stable
- Manipulating up lists of resources

Not the first to make this journey

Seeking clarity from a
pooled, common approach
Three tools crafted to guide our way
Philosophy and governance
Technical framework
Project infrastructure
Philosophy and governance

- Ease repository interaction through Hydra head with relevant functionality
- Address a wide range of digital content use cases
- Ensure sustainability through wide adoption
Initial quest started from town of Fedora
... but outcomes could inform quests from other starting points
Hydra Partners are individuals, institutions, corporations or other groups that have committed to contributing to the Hydra community; they not only use the Hydra technical framework, but also add to it in at least one of many ways: code, analysis, design, support, funding, or other resources. Hydra Partners collectively advance the project and the community for the benefit of all participants.
Hydra Adopters:
• Indiana University
• Glasgow Caledonian University
• UIUC
Hydra Design
  * Define Functional Objectives & supporting, high-level technical objectives
  * (Shape and) Fund work
  * Define conceptual models
  * Define Data Models & Content Models, providing samples
  * Provide Sample Data
  * Share design patterns & Management techniques
  * UI Design & Spec
  * End-user Documentation
  * End-user Training
  * Maintain consistency of User Experience
  * Quality Assurance
Hydra Developer
* Define Technical Architecture
* Coordinate development of common functionality
* Implement Data & Content Models
* Define & Enforce Development Practices
* Code Development
* Integration & Release
* Developer & Deployment Documentation
* Developer & Sys Admin Training
Legal partnership
• Consortium agreement
• Code licensing (Apache)
Technical framework

- Data model
- Technical stack
Keep it simple
• Model for common metadata
• Model for generic simple content
• Model for static images
• Model for JPEG2000 images
- Model for common metadata
- Model for generic simple content
- Model for static images
- Model for JPEG2000 images

- Model for parents
- Model for sets
Don't call it a content model!
• Atomistic v. compound modelling
• Fedora c-modelling
• Hydra Ruby modelling
- Code available via GitHub
- Active contributor/Hydra developer community
- Reference implementation based on Ruby on Rails
Ohloh analysis
Ohloh analysis

- 25 regular contributors in past 12 months
- Contributions amount to over $7.5 million worth of effort
- Top 2% of current open source teams
• Code available via GitHub
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• Reference implementation based on Ruby on Rails
Why Ruby?
Why Ruby?

- Rapid application
- Testable environment
- MVC model supports well-structured approach
Customizable Application Framework

Compelling User Interaction

Content-aware Search & Discovery

Hydra Rails Plugin (CUD)

Fedora

Flexible Access Controls

Preservation Oriented Storage

Customizable Indexing

Solr

Robust, Flexible, Faceted Search

Blacklight (R)

Solrizer
Stanford Everyday Electronic Materials (EEMs) Hydra head
Abstract

Anthropogenic impacts to ocean ecosystems have been well documented throughout the globe, highlighting commercial fishing as a primary threat to marine life populations and habitats. Small-scale commercial fishing operations provide more than half of the world’s seafood, employ over 90% of all fishermen, and take place along a vast proportion of the world’s coastline. Their local, decentralized nature poses unique challenges for research, data collection, and management, particularly in developing nations. As a result, a focus on large, industrial fisheries has discounted the potential impacts of small-scale fisheries, leading to an assumption that they are generally more sustainable. My research on two remote fishing cooperatives in Baja California Sur, Mexico asks to what extent these small-scale fisheries are sustainable, and in cases where significant ecological impacts do occur, I offer and compare several distinct conservation approaches. While engaging fishermen to participate directly in the data collection, I begin by conducting a series of studies that examine how small-scale fisheries interact with marine ecosystems. I quantitatively assess potential ecological effects including bycatch of non-target species and damage to seafloor habitats resulting from several common fishing practices and find that the type and magnitude of

Stanford ETD Hydra head
Northwestern image cropping Hydra head
Welcome to Libra
Online Archive of University of Virginia Scholarship
Libra makes publications available to the world and provides safe and secure storage for the scholarly output of the U.Va. community.

Open Access Works
Faculty scholarly works available for research, scholarship, teaching and learning in a central, stable location. Learn more...

Electronic Theses & Dissertations (Coming Soon)
Find current theses and dissertations from departments and schools around Grounds.

Datasets (Coming Soon)
Datasets from many disciplines are increasingly ubiquitous in higher education. Find data in a variety of formats.

University of Virginia
open access Hydra head
Notre Dame Atrium exhibition Hydra head
Welcome to the Hull Hydra site!

This site is under active development and should not be used yet as a reliable repository. Hull's current repository, eDocs, is available to University users through the university portal or to the public through https://edocs.hull.ac.uk.

You have no search selected. Create a search by adding a search term in the box above and/or by using the filters at the left of the screen.

Popular searches
- ETD collections
- University policies
- Domesday dataset

About Hydra
The Hydra project is developing a new repository for digital materials at the University of Hull. This will eventually replace the eDocs system that has been in use for some time. The new repository can hold and manage any type of digital material, and is being developed in response to the growth in the amount of digital material that is generated through the research, education and administrative activities within the University. The repository is particularly well suited for materials that can be shared (openly or on a restricted basis) and/or where the material needs to be preserved for the medium to long-term.

Materials currently being managed through the eDocs repository include images, project reports, undergraduate dissertations, teaching materials, datasets, collections of past exam papers and doctoral theses.

The repository is being developed by Library & Learning Innovation and ICTD at the University working in close cooperation with other members of the academic community.
15 heads either done or in progress
Video repository and head set up in 4-6 weeks at Notre Dame from scratch
Philosophy and governance
Technical framework
Project infrastructure
Hydra provides a core basis upon which others can build (travel?), assured that they are developing in a way that others find useful in their own environments.

Hydra provides a data model that can be used by others, avoiding the need to establish individual models on each occasion.

Hydra continues to provide software that others can, and have, used to address local needs, and allowing them to focus on these needs as a priority over the underlying infrastructure.

The partners are guided by the governance that will allow them to further contribute at the appropriate level or area of interest.

Hydra is informed by a community of users that can provide mutual support in both development and use of the repository solutions that emerge.
We have gone far because we have travelled together

We have caught glimpses of the Hydra on our journey.
We have gone far because we have travelled together

We have caught glimpses of the Hydra on our journey
- Many have been mirages
We have gone far because we have travelled together

We have caught glimpses of the Hydra on our journey
  • Many have been mirages

We now have a good sight of the Hydra
  • Many have seen it in their own way
We have gone far
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We have caught glimpses of the Hydra on our journey
  • Many have been mirages

We now have a good sight of the Hydra
  • Many have seen it in their own way

But the quest goes on
  • And Partners are continuing to work together
The next 12 months
The next 12 months

Follow-up with known adopters of the software

Formalise partnership model

Quarterly meetings
The next 12 months

Follow-up with known adopters of the software

Formalise partnership model

Quarterly meetings

Promote developer infrastructure

Roll out new heads into production
Other presentations at OR

Hydra 24x7 (case studies and developer practice) - Friday, 3:30pm, Room 202

Hydra Framework: Open Source Collaboration in Action - Friday, 4:45pm, Room 202
Thank you

The Quest for the Hydra

to be continued...
Hydra website - http://projecthydra.org

Hydra wiki - https://wiki.duraspace.org/display/hydra/

Hydra GitHub - https://github.com/projecthydra/