

WGBH & Indiana University

PHYDO

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Asynchronous Storage of Digital Preservation  
Masterfiles



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# Fedora 4 Asynchronous Storage: Proof of Concept

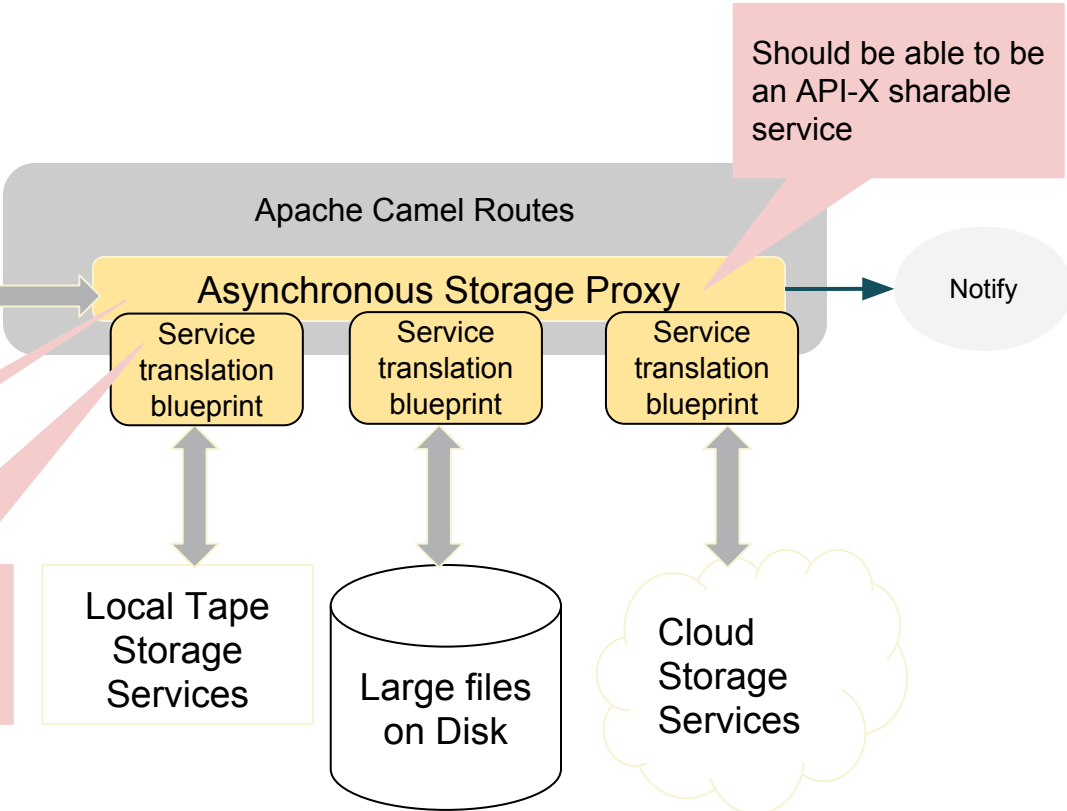
## Hyrax UI gem

Title	Unit	State	Format	File	Size (M)
NT/OSACKER BALLET IN TWO ACTS	B-MUSIC	archived	Open Reel Audio Tape	MDPI_4000001197740_01_access.mp4	34.48M
NT/OSACKER BALLET IN TWO ACTS	B-MUSIC	archived	Open Reel Audio Tape	MDPI_4000001197740_01_pres.wav	819.661M
NT/OSACKER BALLET IN TWO ACTS	B-MUSIC	archived	Open Reel Audio Tape	MDPI_4000001197740_01_prod.wav	819.661M

Asynchronous aware user interface provides interactions

Proxy provides API with common endpoints and responses

Translations map from common API to specific storage APIs



# Invoking from asynchronous interactions from Fedora 4 API

Redirecting node via external-body MIME type; can be set using Fedora 4 API and also via Hydra Works file behaviors

Access to redirecting nodes via Fedora 4 API invokes immediate redirect to stored URL

## Fedora 4

RDF resource container node

Non-RDF resource node

URL redirect

The URL to redirect to would be wherever the Asynchronous Interactions UI is deployed, immediately invoking interactions for a unique identifier (preferably using persistent URLs)

## Asynchronous Interactions UI

Request MDPI Master Files						
Barcode	Title	Unit	State	Format	File	Size (M)
40000001197740	NITCRACKER BALLET IN TWO ACTS	B-MUSIC	archived	Open Reel Audio Tape	MDPI_40000001197740_01_access.mp4	34.48M
	NITCRACKER BALLET IN TWO ACTS	B-MUSIC	archived	Open Reel Audio Tape	MDPI_40000001197740_01_pres.wav	819.661M
	NITCRACKER BALLET IN TWO ACTS	B-MUSIC	archived	Open Reel Audio Tape	MDPI_40000001197740_01_prod.wav	819.661M

Apache Camel Routes

Asynchronous Storage Proxy




Slow storage service



## Attributes

Attribute Name	Values
Mdpi barcode	4000000363814
Unit of origin	B-ATHFHOCKEY
Digitized by entity	IU Media Digitization Studios
Digitized by staff	rcmoblej
Original format	8mm Video
Recording standard	NTSC
Definition	SD
Image format	4:3
Extraction workstation	Dell Precision HR4W942
Original identifier	Unknown
Mdpi timestamp	20160527
Ingested date	2016-08-30T17:02:43Z
Modified date	2016-08-30T17:02:49Z
Visibility	<a href="#">Open Access</a>

## Files

File	Filename	Quality Level	Visibility	Actions
	MDPI_4000000363814_01_access.mp4	Access	<a href="#">Open Access</a>	
	MDPI_4000000363814_01_mezz.mov	Production	<a href="#">Open Access</a>	
	MDPI_4000000363814_01_pres.mkv	Preservation	<a href="#">Open Access</a>	



## Attributes

Attribute Name	Values
Title	IU v N/Western 2nd Half 10/17/03
Mdpi barcode	40000000363814
Filename	MDPI_40000000363814_01_access.mp4
File format	mov,mp4,m4a,3gp,3g2,mj2
Codec type	video audio
Codec name	h264 aac
Codec long name	H.264 / AVC / MPEG-4 AVC / MPEG-4 part 10 AAC (Advanced Audio Coding)
Duration	2224
Quality level	access
File Size (bytes)	867290015
Bit rate	3119623
Unit of origin	B-ATHFHOCKEY
Checksum	42d3ba5203b2fb506b292b09eef58f68
Ingested date	2016-08-30 17:05:44
Modified date	2016-08-30 17:05:49
Visibility	<a href="#">Open Access</a>

## Storage Status: Not Cached

[Stage to Cache](#) [Fixity Check](#)

[Back to Work](#)

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Fixity check request for MDPI\_40000000363814\_01\_access.mp4 has been sent



## File Details IU v N/Western 2nd Half 10/17/03

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Visibility

Open Access

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## Storage Status: Staging to Cache

Back to Work

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Bit rate	3119623
Unit of origin	B-ATHFHOCKEY
Checksum	42d3ba5203b2fb506b292b09eef58f68
Ingested date	2016-08-30 17:05:44
Modified date	2016-08-30 17:05:49
Visibility	<a href="#">Open Access</a>

## Storage Status: Staged to Cache

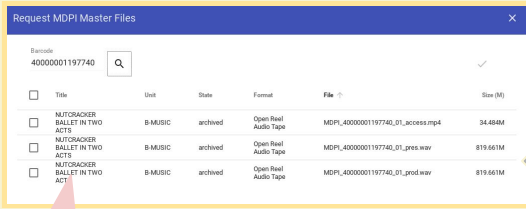
Checksum	42d3ba5203b2fb506b292b09eef58f68
Fixity date	2016-09-30 12:31:13

[Download](#)[Fixity Check](#)[Unstage from Cache](#)[Back to Work](#)



# Fedora 4 Asynchronous Storage: Proof of Concept

## Hyrax UI gem



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## Apache Camel Routes

## Asynchronous Storage Proxy

Service translation blueprint

Service translation blueprint

Service translation blueprint

Local Tape Storage Services

Large files on Disk

Cloud Storage Services

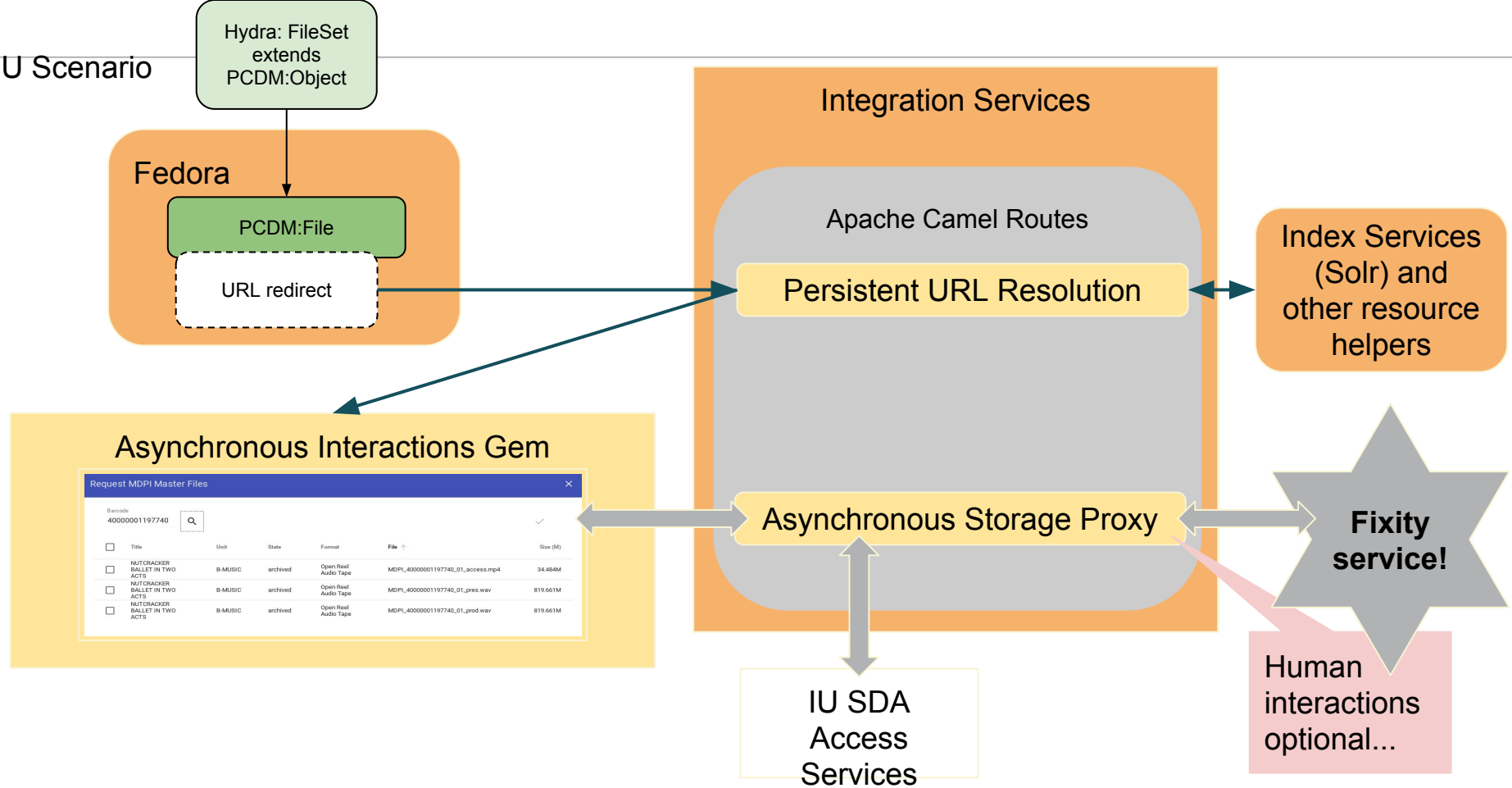
Notify

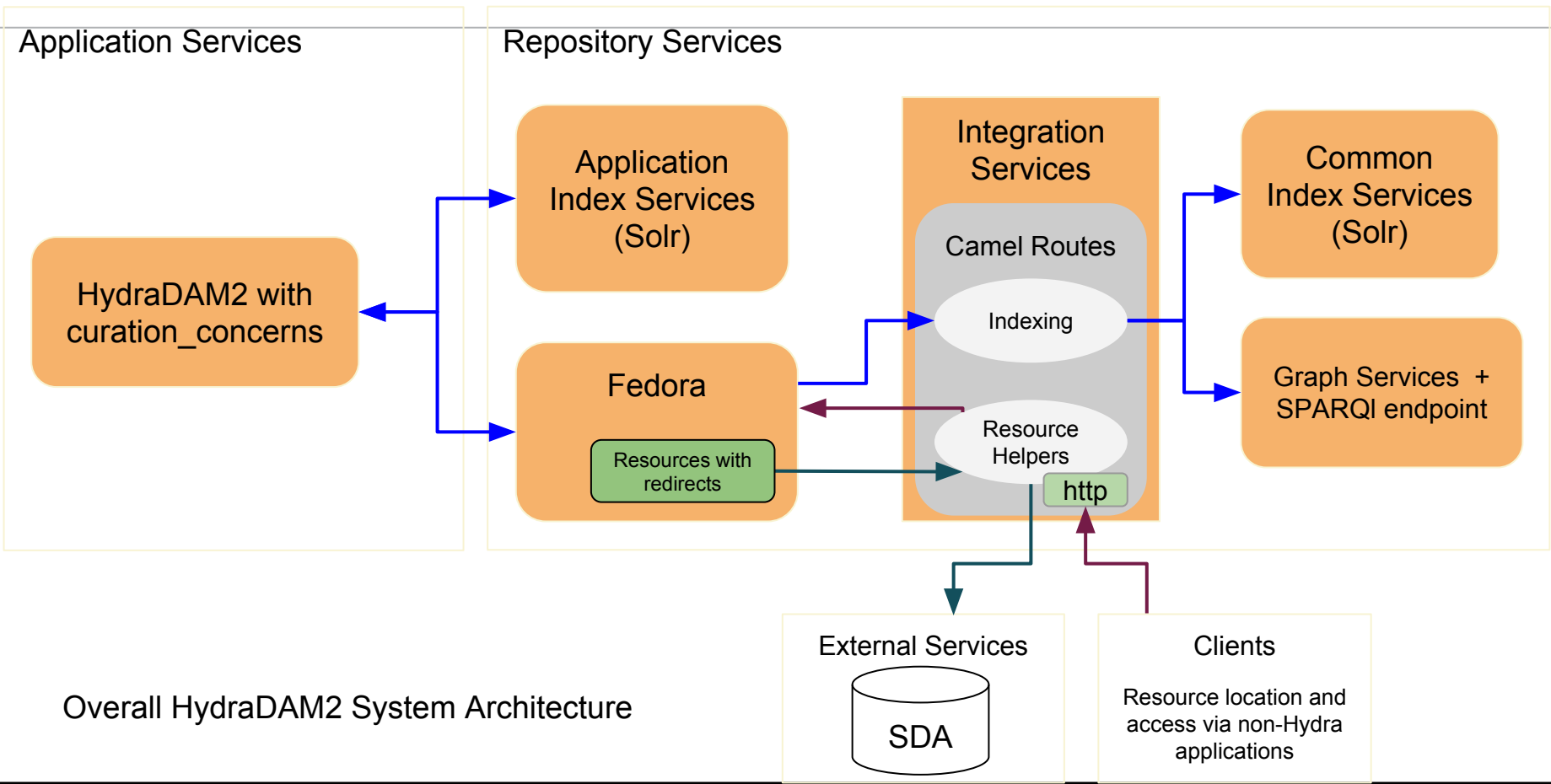
Should be able to be an API-X sharable service

# Areas of Potential Development

- Non-RDF Resource redirect URI for External Storage for Hyrax
- Hyrax UI and API to support External Storage Proxy
- Camel-based External Storage Proxy
- External Storage Proxy API with S3 or Glacier

# IU Scenario





Overall HydraDAM2 System Architecture

What might be delivered as part of HydraDAM2? Potentially everything in yellow.

