Search. Discover. Share.

Virtual VuFind Summit 2020

September 29-October 1, 2020

VuFind and Koha integration

A comparison of three generations of connectivity approaches

Parthasarathi Mukhopadhyay, Kalyani University, WB, India

Union Catalogue

a list of the combined holdings of several libraries.

(Classical definition)

a union catalogue is union files of the stock of several libraries merged into a central database to allow end users to search an array of library catalogues through a single-point access interface.

(Modern view)

a well-developed, central system permit improved search functionality, payment mechanisms, direct user services and integration with journals databases and full-text along with OPAC functionalities.

(Futuristic view)

HEI in India : At a Glance

- There are **993 Universities, 39931 Colleges and 10725 Stand Alone Institutions;**
- 394 Universities are located in **rural areas**;
- 16 Universities are exclusively **for women**;
- 1 **Central Open** University, 14 **State Open** Universities and 1State **Private Open** University, there are 110 **Dual mode** Universities (the maximum (13) of them are located in Tamil Nadu)
- There are **548** General, **142** Technical, **63** Agriculture & Allied, **58** Medical, **23** Law, **13** Sanskrit and **9** Language Universities and rest **106** Universities are of other categories.
- Use of Integrated Library Systems (ILSs) are heterogeneous;
- Union catalogues (a few only) are far from the modern views of union catalogue.

AISHE Report 2018-19 (the latest one) @
http://aishe.nic.in/aishe/viewDocument.action?documentId=262

ILSs in India - Categorization

Origin	*Application Domain*		
	Large System	**Medium Range System**	**Small System**
ILSs of foreign origin	• Alice for WINDOWS • Evergreen • Koha (ver 3.x) • Virtua ILS	• Koha (ver 2.x) • Emilda	• phpMyLibrary • OpenBiblio • PMB
ILSs developed over ILS of foreign origin	• NG-TLMS.NET (over TLMS package)	• WINSANJAY • ABCD (Over CDS/ISIS)	• LAMP • WEBLIS (Over CDS/ISIS)
ILSs of Indian origin	• LIBSUITE • LIBSYS	• AUTOLIB • DLMS	• ARCHIVES • CATMAN
	• MECSYS • NEWGENLIB • NEXLIB • SLIM 21 • SOUL • SUCHIKA • TULIPS • ULYSIS • WILISYS	• GRANTHALAYA • LIBRA • LIBRARIAN • LISTPLUS • NETLIB • NIRMALS • SLIM ++	• E-GRANTHALAYA • GOLDEN LIBRA • LIBMAN • LIBRARY-MANAGER • LIBRIS • LIBSOFT • LOAN-SOFT • SALIM

Koha (ver 16.x to 20.x) and SOUL 2.x are now two mostly used ILSs in Indian HEIs

A Virtual Union catalogue for Academic Libraries in India

Is it possible to develop a framework for Union Catalogue of academic libraries in India by using Koha ILS at the backend and VuFind discovery system in the front?

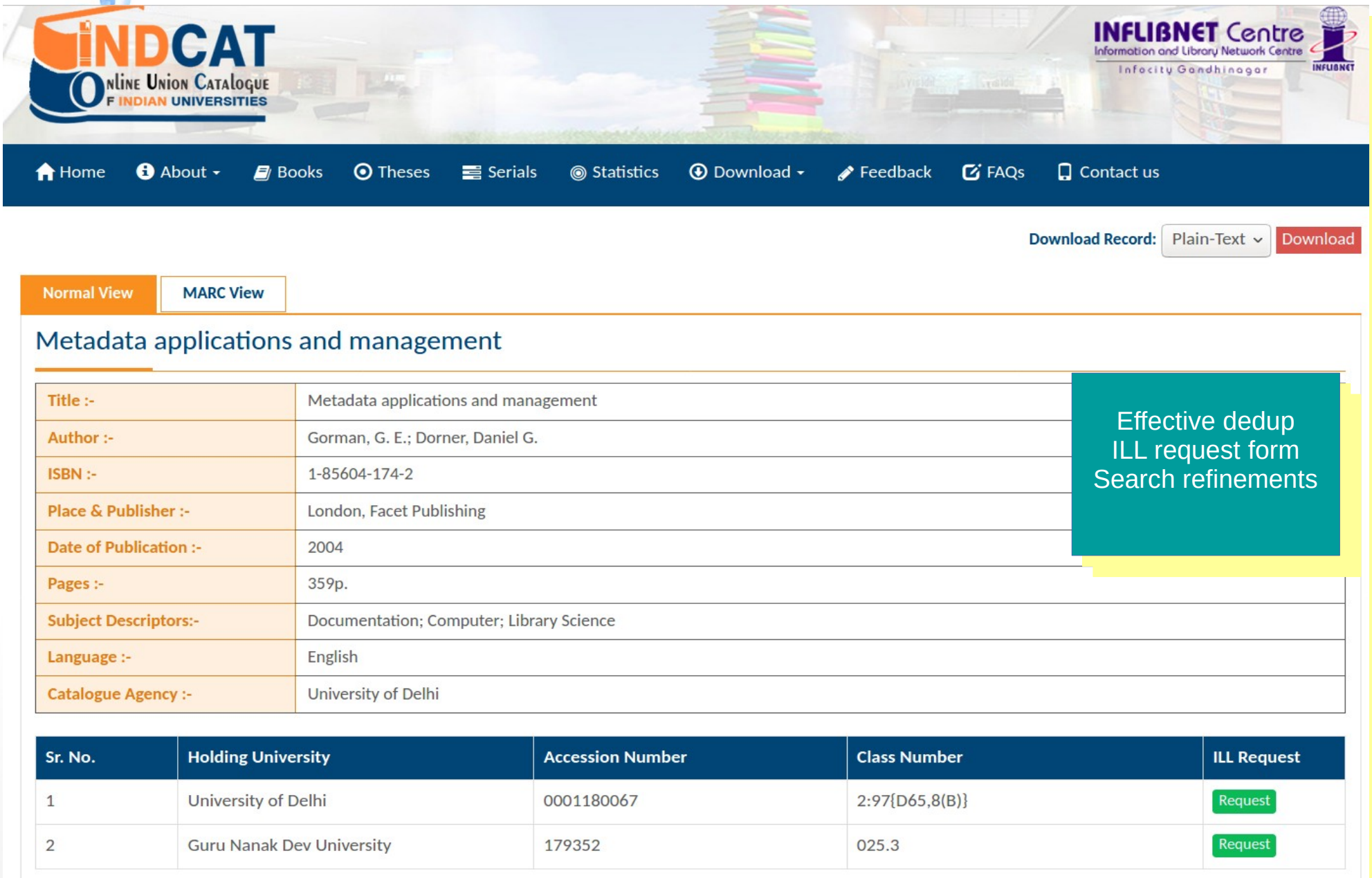
How and to what extent is it feasible to fuse OPAC functionalities (such as real-time item availability status, holds placement, holds preference settings and so on) in a union catalogue framework?

Backdrop

till date most of the national-level and global-scale union catalogues support only finding function of a catalogue and

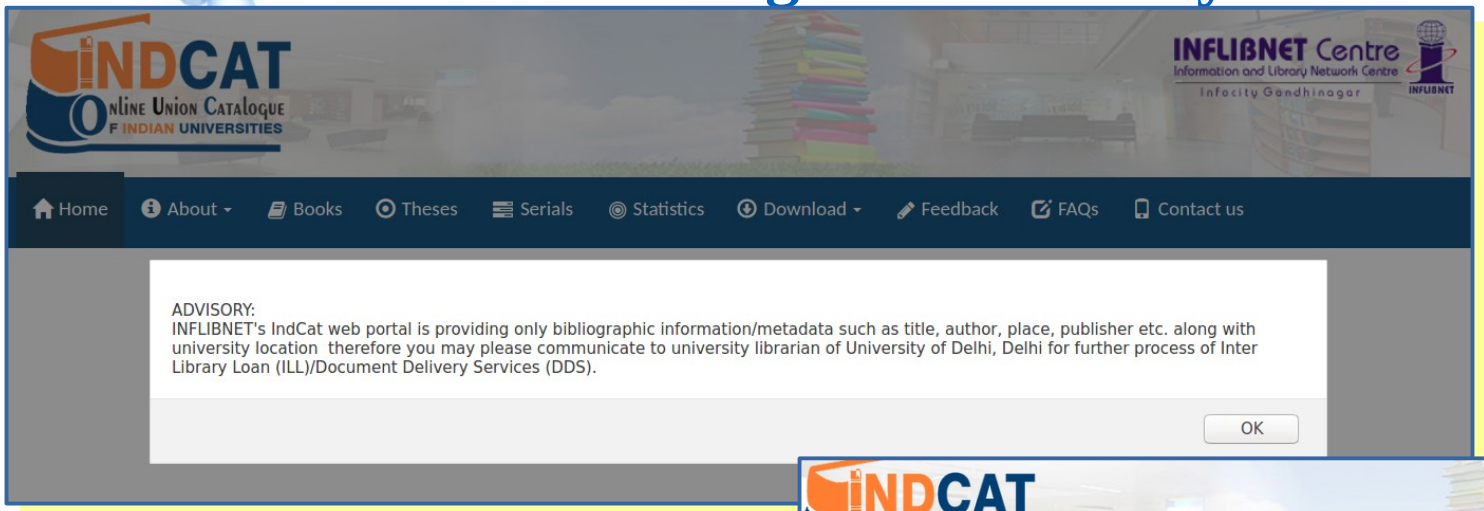
- neglecting the other OPAC functionalities such as
  - real-time availability status;
  - holds placement, renew, article request etc;
  - use of ILSs credentials for authentication (SSO); and
  - extended search features like full-text search, faceted navigation etc.
  - FRBRized display/grouping of resources

Union Catalouge of University Libraries in India: IndCat
(indcat.inflibnet.ac.in)

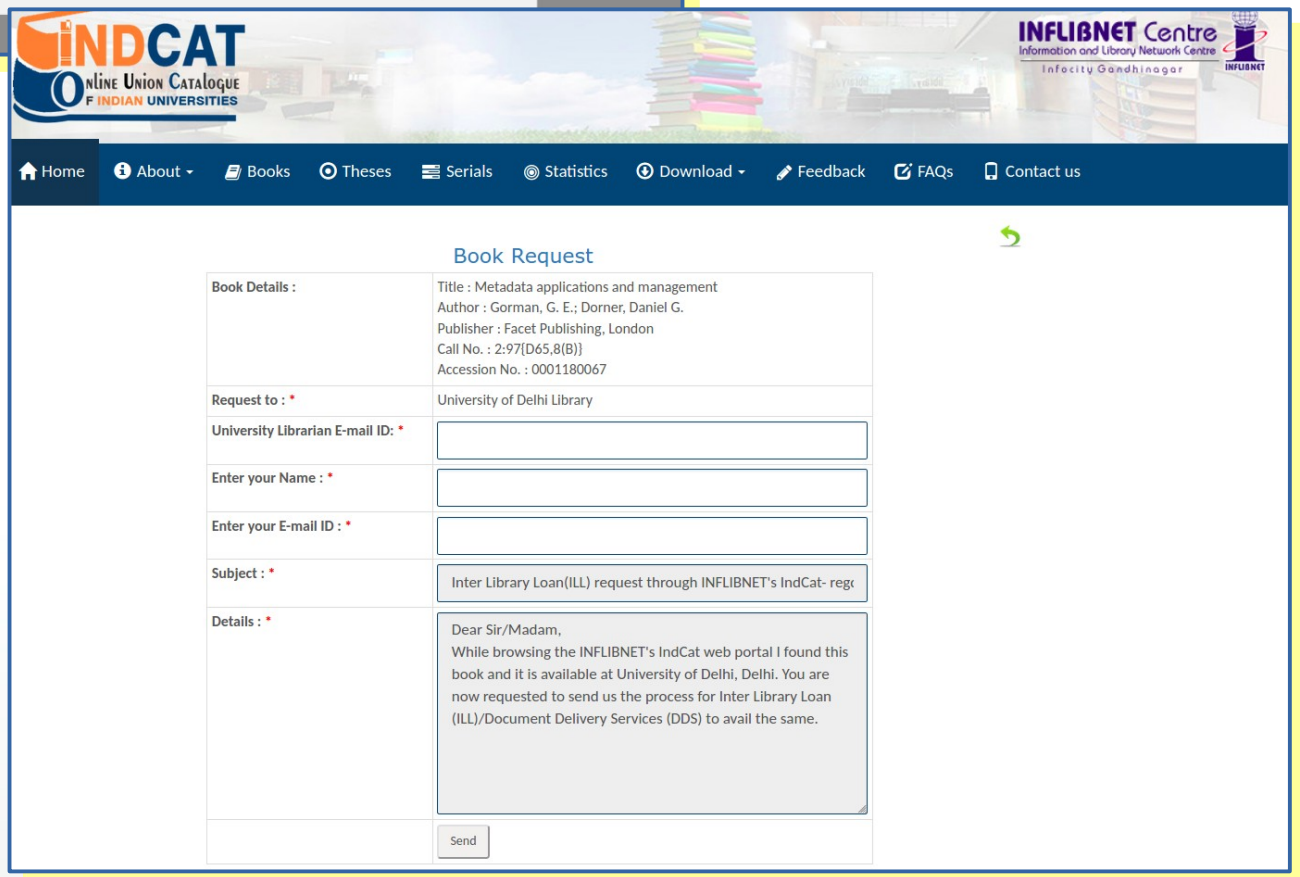


Effective dedup
ILL request form
Search refinements

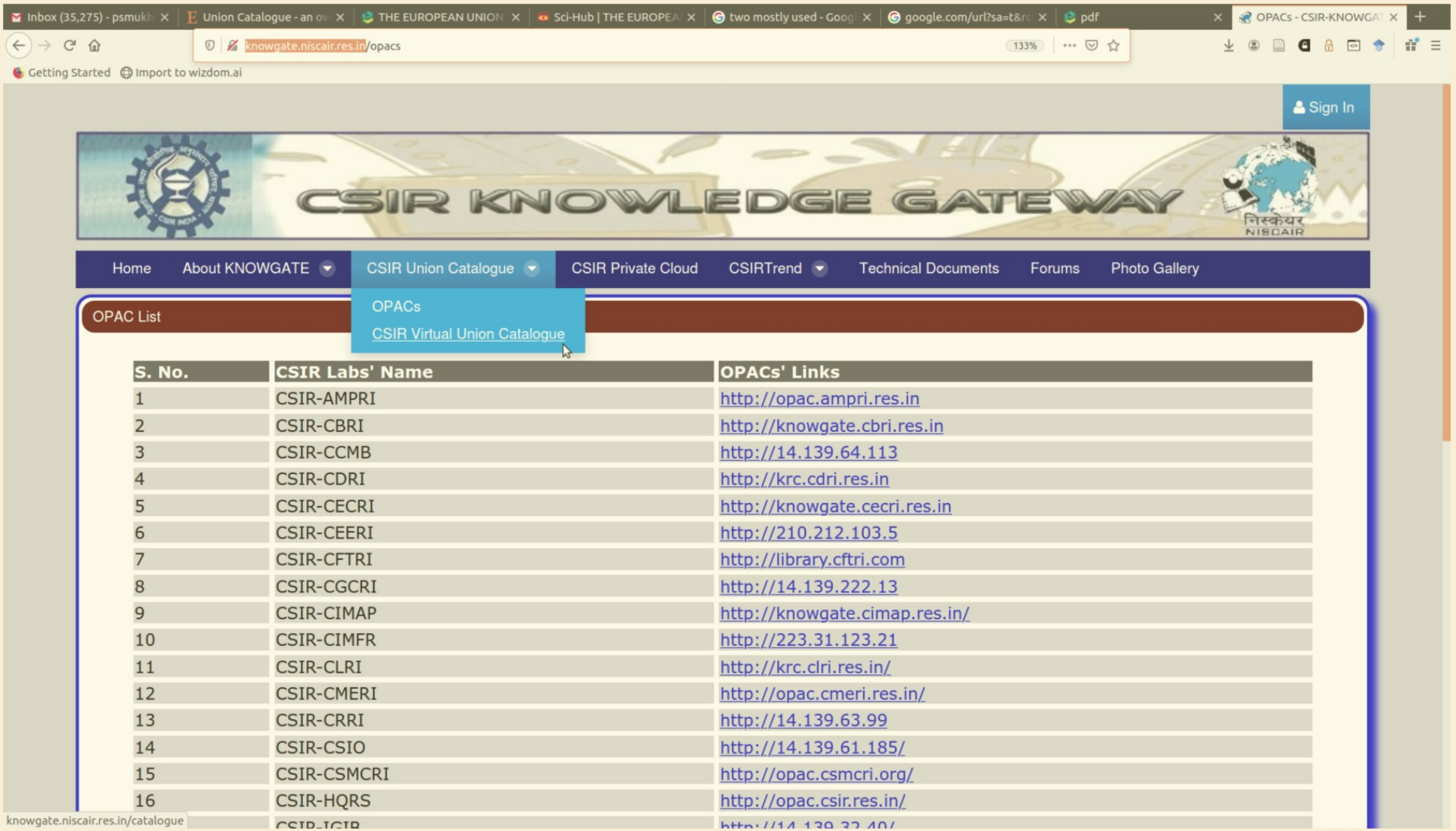
Union Catalouge of University Libraries in India: IndCat



- No real-time item-level status
- No OPAC functionalities
- No faceted navigation (only search refinements)
- No FRBRized display (all editions of a work are not in one place)
- No ILS based authentication

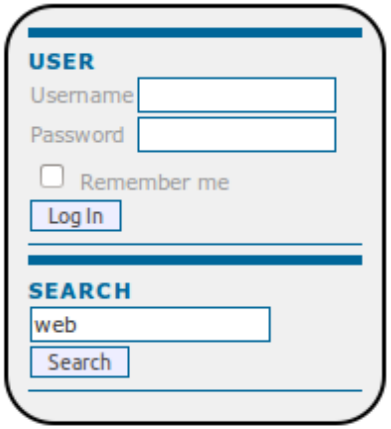


National Union Catalouge: CSIR Knowledge Gateway (http://knowgate.niscair.res.in)



S. No.	CSIR Labs' Name	OPACs' Links
1	CSIR-AMPRI	http://opac.ampri.res.in
2	CSIR-CBRI	http://knowgate.cbri.res.in
3	CSIR-CCMB	http://14.139.64.113
4	CSIR-CDRI	http://krc.cdri.res.in
5	CSIR-CECRI	http://knowgate.cecri.res.in
6	CSIR-CEERI	http://210.212.103.5
7	CSIR-CFTRI	http://library.cftri.com
8	CSIR-CGCRI	http://14.139.222.13
9	CSIR-CIMAP	http://knowgate.cimap.res.in/
10	CSIR-CIMFR	http://223.31.123.21
11	CSIR-CLRI	http://krc.clri.res.in/
12	CSIR-CMERI	http://opac.cmeri.res.in/
13	CSIR-CRRI	http://14.139.63.99
14	CSIR-CSIO	http://14.139.61.185/
15	CSIR-CSMCRI	http://opac.csmcri.org/
16	CSIR-HQRS	http://opac.csir.res.in/

VIRTUAL UNION CATALOGUE



HOME ABOUT LOG IN BROWSE SEARCH HELP LIBRARIAN ILL-ACCOUNT

Home > Search Results

Search Results

From knowledge abstraction to management : using Ranganathan's faceted schema to...
Suman, Aparajita.
CSIR - National Science Library (NSL-NISCAIR)
INTER LIBRARY LOAN FOR CSIR LABORATORY STAFF

Bibliographic information organization in the semantic web /
Willer, Mirna. ; Dunsire, Gordon.
CSIR - National Science Library (NSL-NISCAIR)
INTER LIBRARY LOAN FOR CSIR LABORATORY STAFF

Web animation and interactivity the ultimate guide to web design
Christine Saucier
CSIR - National Science Library (NSL-NISCAIR)
INTER LIBRARY LOAN FOR CSIR LABORATORY STAFF | VIEW ORIGINAL

Web dot com web margdarshika (in Marathi)
Arunjit Singh ; Prabhvir Sahami
CSIR - National Science Library (NSL-NISCAIR)
INTER LIBRARY LOAN FOR CSIR LABORATORY STAFF | VIEW ORIGINAL

Web dot com web margdarshika (in Hindi)
Arunjit Singh ; Prabhvir Sahami
CSIR - National Science Library (NSL-NISCAIR)

No Comments

:(

National Union Catalouge - UK

Library hub discover (erstwhile Copac) - discover.libraryhub.jisc.ac.uk

Library Hub Discover

About | Search | Advanced Search | Support

Discover > Search Results 1 - 25 of 71 for title: Metadata management.

Help

title: Metadata management

Search

More search options

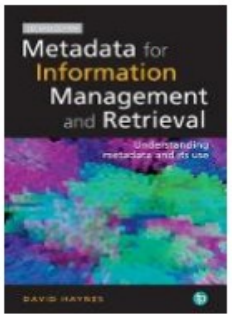
More online resources freely available.

As library buildings are now closed, some publishers are giving free access to online books and journals during the corona virus outbreak — find and access many of these resources through Discover. Read more on our blog....

Results 1 - 25 of 71.

<< < 1 > >>

Sort by Title (A-Z) Sort



Metadata for information management and retrieval : understanding metadata and its use / David Haynes.

Author: **Haynes, David,**

ISBN: **9781783302161**
178330216X

Edition: **Second edition.**

Published: **London : Facet Publishing, 2018.**

27 Holding libraries

University of Aberdeen Libraries
Birkbeck, University of London Library
University of Birmingham Libraries
British Library
Brunel University London Library
Cardiff University Libraries
City, University of London
Show 20 more...

book E-resource Printed resource

Metadata management for information control and business success / Guy Tozer.

Author: **Tozer, Guy V.**

ISBN: **1-58053-225-X**

Published: **Boston : Artech House, c1999**

8 Holding libraries

Birmingham City University
University of Bradford
British Library
Cardiff University Libraries
University of Huddersfield Library
The Institution of Engineering and Technology
Northumbria University Library

No real-time item level Status

No OPAC functionalities

Effective deduplication

No FRBRization

Library hub discover (erstwhile Copac)

Library Hub Discover

About | Search | Advanced Search | Support

Discover > Search result > Record 1 of 71 for title: Metadata management > British Library

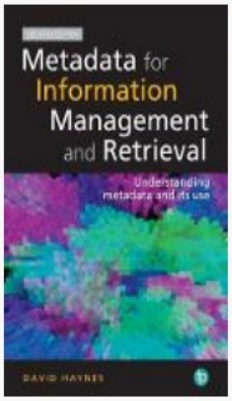
Help

Metadata for information management and retrieval / David Haynes.

Back to results | Back to item

Show more

Author: Haynes, David [author]
Edition: Second edition.
Published: London : Facet Publishing 2017
Physical description: xiv, 267 pages : illustrations ; 24 cm
ISBN: 9781783301157 (hbk.)
9781856048248 (pbk.)
9781783302161 (e-book)
Local notes: Formerly CIP.



book
E-resource
Printed resource
Disable Google Preview
No Google Preview available

Holdings information at British Library

Live circulation data is not available.

Location of copy	Shelfmark	Availability
General Reference Collection, St Pancras Reading Rooms	SPHOA HUR 025.3	
General Reference Collection, St Pancras Reading Rooms	YK.2018.a.2237	

Holding libraries

University of Aberdeen Libraries
Birkbeck, University of London Library
University of Birmingham Libraries
British Library
Brunel University London Library
Cardiff University Libraries
City, University of London
University of Dundee
University of East Anglia Library

National Union Catalouge of Australia: Trove - trove.nla.gov.au

TROVE

ABOUT HELP NEWS PARTNERS SIGN UP LOGIN

Explore Categories Community Research First Australians

Home / Search results / Managing metadata in web-scale discovery systems / edited by Louise F. Spiteri

managing metadata in web-scale

All categories

Advanced Search

Managing metadata in web-scale discovery systems / edited by Louise F. Spiteri

4 Editions under this title

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ALL 6 ACT 1 NSW 2 QLD 1 VIC 2

Macquarie University. Macquarie University Library.
Book

National Library of Australia.
Book

RMIT University. RMIT University Library.
Book

University of Technology Sydney. University Library.
Book

The University of Queensland. University of Queensland Library.
Book

Victoria University. Victoria University Library.
Book

Effective Dedup

Marvelous FRBRization

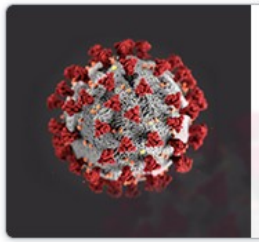
No real-time status

Global Union Catalouge - WorldCat

WorldCat

ti:Managing metadata in web-scale discovery systems

Advanced Search | Find a Library



COVID-19 Resources

Reliable information about the coronavirus (COVID-19) is available from the World Health Organization (current situation, international travel). Numerous and frequently-updated resource results search. OCLC's WebJunction has pulled together information and resources to assist library staff as they consider how to handle coronavirus issues in their communities.

Image provi

Search results for **'ti:Managing metadata in web-scale discovery systems'**

Open Content

- Open Access

Format

- **All Formats (43)**
- Article (24)
  - Chapter (7)
  - Downloadable article (1)
- Book (17)
  - Print book (12)
  - eBook (5)
- Computer file (2)

Refine Your Search

Author

- Association For C... (3)
- Erlandson Rene J (3)
- Lee Eden Bradford (3)
- Schultz William (3)
- Spiteri Louise F (3)
- **Show more ...**

Year

- 2018 (7)

Results **1-10** of about **43** (**.09** seconds)

Select All Clear All **Save to:** [New List] Save

1. 
Managing Metadata in Web Scale Discovery Systems
by Louise Spiteri;
Print book
Language: Spanish
Publisher: London : Facet, 2016.

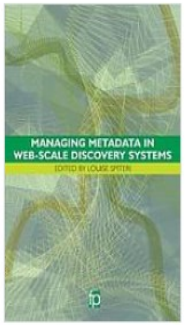
2. 
Managing metadata in web-scale discovery systems
by Louise F Spiteri;
eBook : Document View all formats and languages »
Language: English
Publisher: London : Facet Publishing, 2016.
View all editions »

3. **Managing metadata in web scale discovery systems**
by Louise Spiteri;
Computer file : Audio book, etc. Sound Recording Book
Language: English
Publisher: Malmö : MTM, 2020

No FRBRization in WorldCat

Global Union Catalouge - WorldCat

Add to list | Add tags | Write a review | Rate this item: ☆☆☆☆☆



Managing Metadata in Web Scale Discovery Systems

Author: Louise Spiteri

Publisher: London : Facet, 2016.

Edition/Format: Print book : Spanish

Summary: This book shows you how to harness the power of linked data and web-scale discovery systems to manage and link widely varied content across your library collection. Libraries are increasingly using web-scale discovery systems to help clients find a wide assortment of library materials, including books, journal articles, special collections, archival collections, videos, music and open access collections. Depending Read more...

Rating: ☆☆☆☆☆ (not yet rated) 0 with reviews - Be the first.

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Submit a complete postal address for best results.

Displaying libraries 1-5 out of 5 (700059) Show libraries holding **just this edition**

Library	Held formats	Distance	
1. Staatsbibliothek zu Berlin - Preußischer Kulturbesitz, Haus Potsdamer Straße **SBB-PK, Potsdamer Straße** Berlin, 10785 Germany	Book	4300 miles MAP IT	Library info Ask a librarian Add to favorites
2. Thüringer Universitäts- und Landesbibliothek Jena, 07743 Germany	Book	4400 miles MAP IT	Library info Add to favorites
3. Hochschule für Angewandte Wissenschaften Hamburg, Hochschulinformations- und Bibliotheksservice (HIBS), Fachbibliothek Technik, Wirtschaft, Information **HIBS** Hamburg, 20099 Germany	Book	4500 miles MAP IT	Library info Add to favorites
4. Technische Informationsbibliothek (TIB) Hannover, 30167 Germany	Book	4500 miles MAP IT	Library info Add to favorites
5. University of Manchester Library **Main Library** Manchester, M13 9PP United Kingdom	Book	5000 miles MAP IT	Library info Add to favorites

No real time item-level status… referring to respective OPACs

Facts in a nutshel

- No union catalogue (national or global) is using ILS to design union catalogue;
- Union catalogues are using Discovery Interface (DI) as single-point search entity;
- Union catalogues are mostly depending on the process of harvesting to gather metadata of books (manifestation level) in a central index inside a discovery service;
- Most of these services implemented Deduplication (gathering all items of the same manifestation in one place);
- A few of these services have successfully implemented FRBRized display (gathering all manifestation of the same work in the display);
- But almost all of these union catalogue services failed to implement minimum OPAC functionalities like real-time item availability status, holds placement reservation, login with respective library credentials etc.
- **Why? Simple, ILSs don't talk to DI there……**

But there are exceptions …….

Ohiolink Classic - olc1.ohiolink.edu

OhioLINK Library Catalog

Encore Catalog

Start Over | Modify Search | Search Ohio | Another Search | (Search History)

KEYWORD | Managing metadata in web-sca | Search

3 results found. Sorted by **relevance** | date | title .

Save All On Page

KEYWORDS (1-3 of 3)

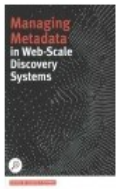
Relevant titles entries 1-3

1 Request Save Item

Managing metadata in web-scale discovery systems / edited by Louise F. Spiteri

Chicago : Neal-Schuman, an imprint of the American Library Association, 2016
ix, 197 pages : Illustrations ; 24 cm

Book



2016

2 Request Save Item

Managing metadata in web-scale discovery systems / edited by Louise F. Spiteri

Chicago : Neal-Schuman, and imprint of the American Library Association, 2016
ix, 197 pages ; 24 cm

Book

2016

3 Request Save Item

Managing metadata in web-scale discovery systems / edited by Louise F. Spiteri

London : Facet, 2016
1 online resource (ix, 197 pages)

Electronic Book Electronic Resources

2016

No Dedup and No FRBRization but can produce real-time item-level status in detail page

Ohiolink Classic - olc1.ohiolink.edu

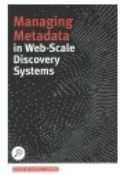
OhioLINK Library Catalog

Encore Catalog

Start Over | Save For Export | MARC Format | Another Search

RECORD NO | b37551908 | Search

Title	**Managing metadata in web-scale discovery systems / edited by Louise F. Spiteri**
Imprint	Chicago : Neal-Schuman, an imprint of the American Library Association, 2016
Edition	U.S. edition



Bookmark this record as <http://olc1.ohiolink.edu:80/record=b37551908~S0>

Library Holdings [Hide]

Request

Library	Location	Online Version	Call Number/Serial Holdings	Status
Kent State U	Main Library Collection		Z666.7 .M36 2016	AVAILABLE
Wright State	Dunbar 3rd Floor		Z666.7 .M36 2016	AVAILABLE

[Go to top]

Description	ix, 197 pages : Illustrations ; 24 cm
Note	"First published in the United Kingdom by Facet Publishing, 2016"--Title page verso
	Includes bibliographical references and index
Subjects	Metadata -- Management
	Information storage and retrieval systems
	Cataloging
Alt Name	Spiteri, Louise F., editor
LC NO	Z666.7 .M36 2016
OCLC #	953796628
ISBN	9780838914908 (paper)
	083891490X (paper)
Isn/Std #	(OCoLC)953796628

ILS-DI

&

OPAL ILS

Ohiolink new - http://catalog.ohiolink.edu

Where ILS can talk to DI

OhioLINK
Connecting Libraries, Learning & Discovery
A Division of the Ohio Department of Higher Education
An OH·TECH Consortium Member

Classic Catalog

Central Library Catalog

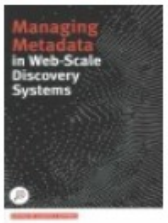
Print lending has resumed among participating libraries. To protect users, some delivery and processing procedures have changed, and items will take longer to arrive. Thank you for your patience!

My Folder (0 items)

Search: Managing Metadata in Web Scale Discover

Advanced Search

< Back to results



Managing metadata in web-scale discovery systems / edited by Louise F. Spiteri

Book | Neal-Schuman, an imprint of the American Library Association | 2016 | U.S. edition

Request it

Additional actions:

Link to this record

Permalink: http://catalog.ohiolink.edu/iii/encore/record/C__Rb37551908

Libraries

2 OhioLINK libraries own this item. Click here to check availability.

Browse Results

Next result: Managing metadata in web-scale discovery systems / edited ...

Other Sources:

Search Ohio

Show Results

View in classic catalog

View MARC display

Achievements of Ohiolink

Managing metadata in web-scale discovery systems / edited by Louise F. Spiteri

Book | Neal-Schuman, an imprint of the American Library Association | 2016 | U.S. edition

Request it

Additional actions:

Browse Results

Next result: Managing metadata in web-scale discovery systems / edited ...

Other Sources:

Search Ohio

Show Results

View in classic catalog

View MARC display

Link to this record

Permalink: http://catalog.ohiolink.edu/iii/encore/record/C__Rb37551908

Libraries

2 OhioLINK libraries own this item. Click here to check availability.

More Details

Description	ix, 197 pages : Illustrations ; 24 cm
Note	"First published in the United Kingdom by Facet Publishing, 2016"--Title page verso Includes bibliographical references and index
Subjects	Metadata -- Management Information storage and retrieval systems Cataloging
Alt Name	Spiteri, Louise F., editor
LC NO	Z666.7 .M36 2016
OCLC #	953796628
ISBN	9780838914908 (paper) 083891490X (paper)
Isn/Std #	(OCoLC)953796628

Locations

Library	Shelving Location	Call Number and Serial Holdings	Status
Kent State U	Main Library Collection	Z666.7 .M36 2016	AVAILABLE
Wright State	Dunbar 3rd Floor	Z666.7 .M36 2016	AVAILABLE

RESTful APIs

Sierra ILS

&

Encore Duet discovery interface

Real-time item level status

No other OPAC functionalities

Finna.fi

FINNA.FI SEARCH FUNCTIONS ABOUT FINNA INSTRUCTIONS FI | SV LOGIN

Information services today : an introduction Title Advanced search

Reset Filters Content Type: Book material > Book

NARROW SEARCH

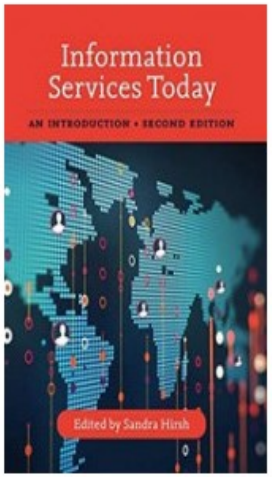
Showing 1 - 2 results of 2 Sort Relevance Results per page 20 Show as

Available online 0

PERMISSIBLE USES

CONTENT TYPE

- Book material 3
  - Book
  - eBook 1
- Journal/Article 1



Information services today : an introduction

Book

Hirsh, Sandra, toimittaja

2018

SHOW OTHER VERSIONS (2)

Helmet Libraries

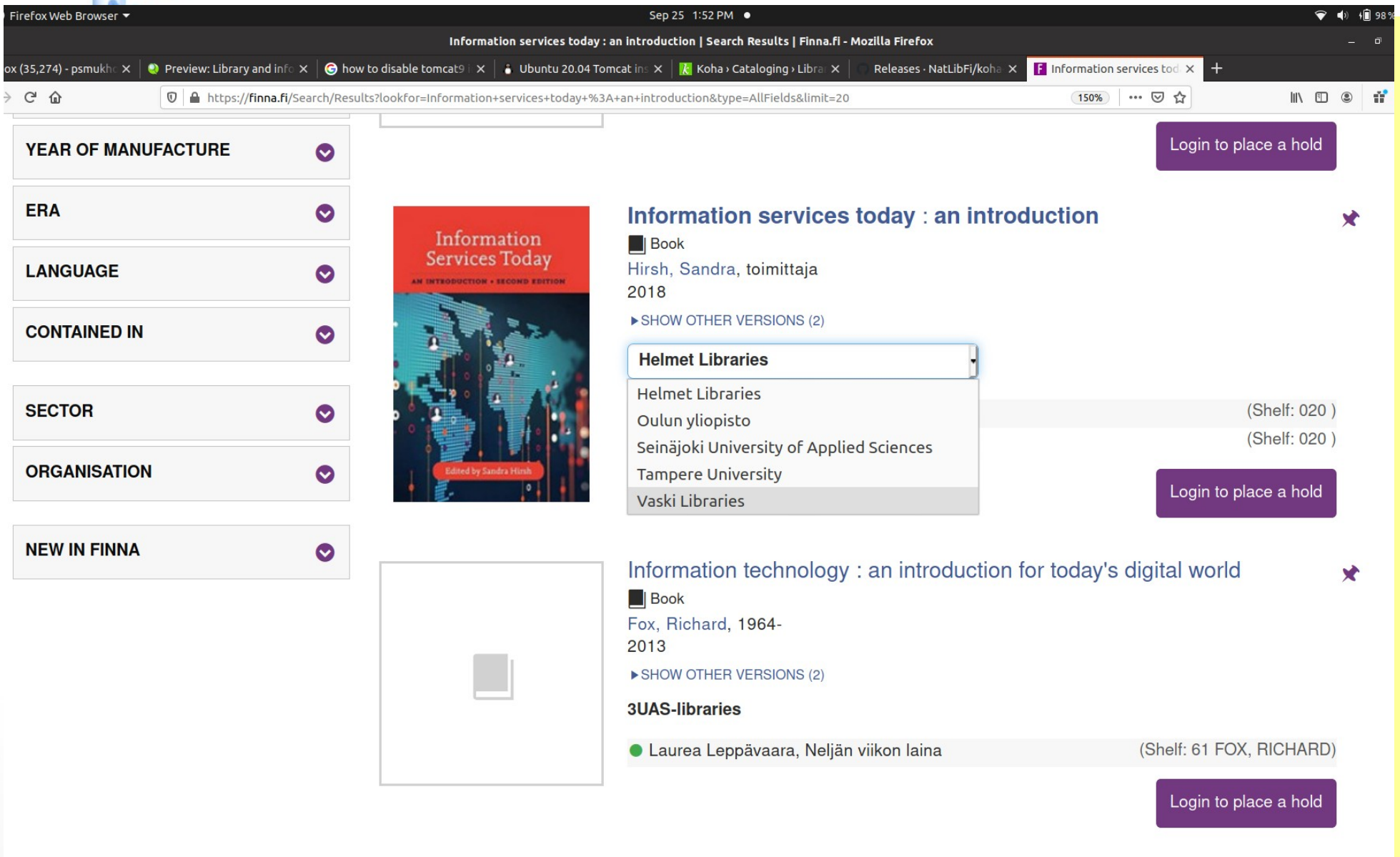
Kallio aik (Shelf: 020)

Töölö aik (Shelf: 020)

Login to place a hold

De-duplication, FRBRization and real-time status in DI

Finna.fi



Real-time status in a given holding library

Finna.fi

Information services today : an introduction | Search Results | Finna.fi - Mozilla Firefox

https://finna.fi/Search/Results?lookfor=Information+services+today+%3A+an+introduction&type=AllFields&limit=20

YEAR OF MANUFACTURE

ERA

LANGUAGE

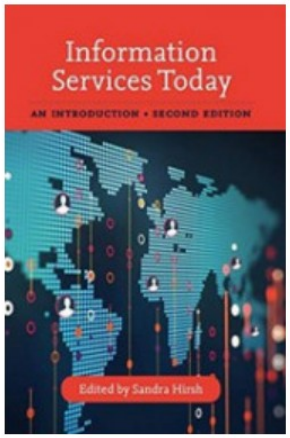
CONTAINED IN

SECTOR

ORGANISATION

NEW IN FINNA

Login to place a hold



Information services today : an introduction

Book

Hirsh, Sandra, toimittaja

2018

▸SHOW OTHER VERSIONS (2)

Vaski Libraries

available 1 library units

Items: 1

Turku

(Shelf: 02 INF)

Turku Main Library, Non-fiction

Available items: 1

Login to place a hold

Information technology : an introduction for today's digital world

Book

Fox, Richard, 1964-

2013

▸SHOW OTHER VERSIONS (2)

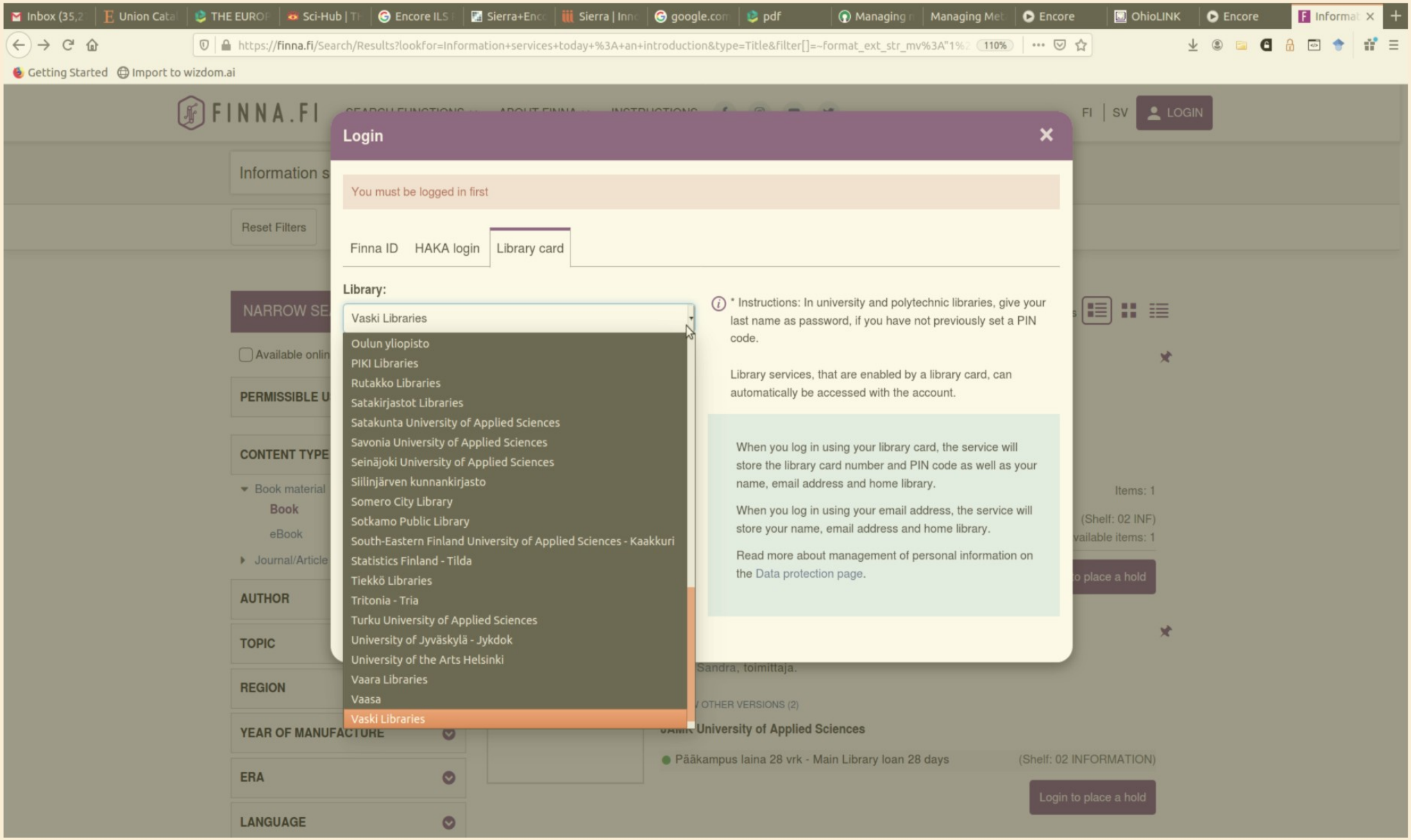
3UAS-libraries

Laurea Leppävaara, Neljän viikon laina (Shelf: 61 FOX, RICHARD)

Login to place a hold

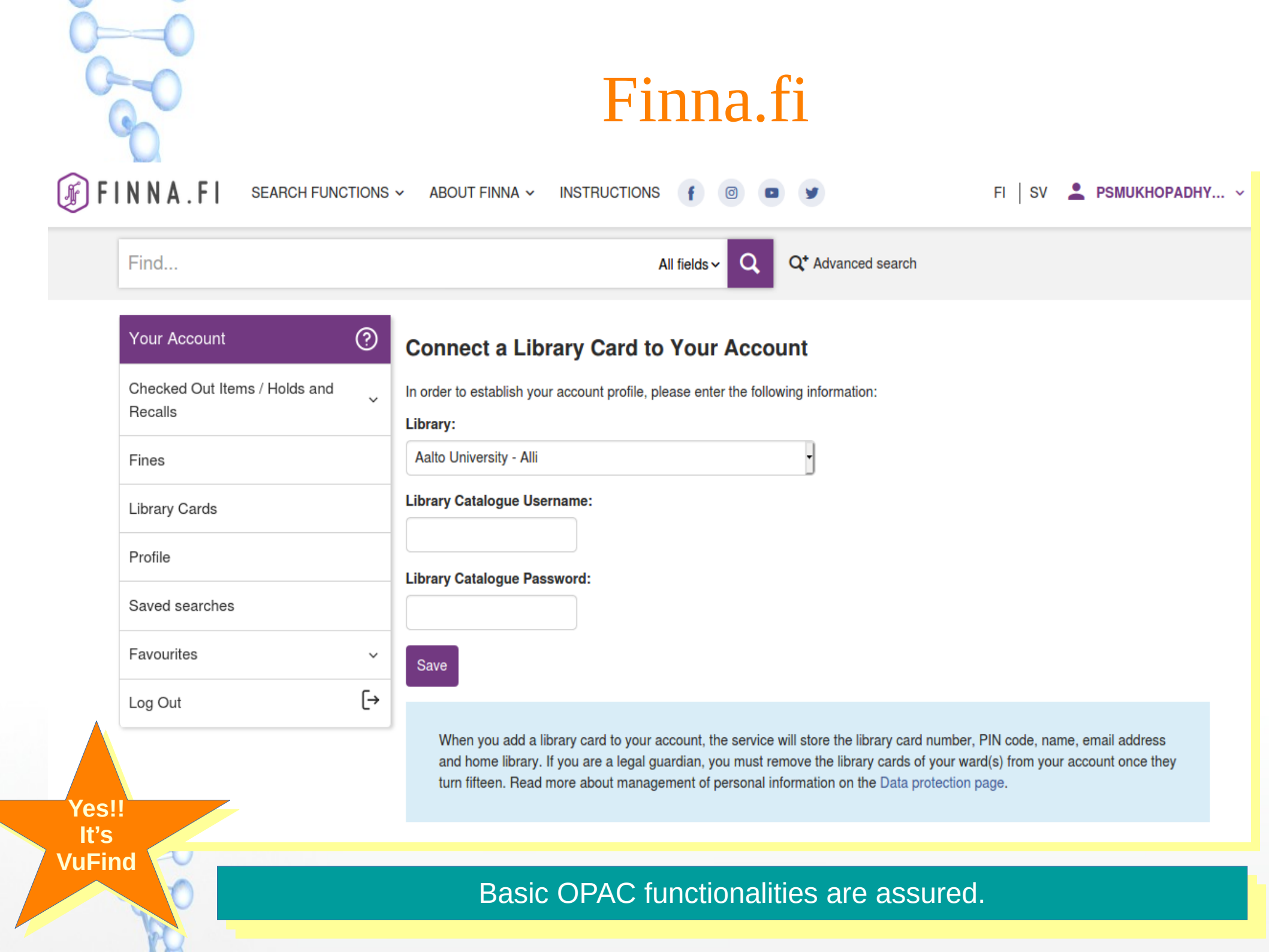
Real-time status in a given holding library

Finna.fi



ILS credentials based login option ….

Finna.fi



Yes!! It's VuFind

Basic OPAC functionalities are assured.

Generations of DI to ILS Connectivity

- Most of the union catalogues are discovery services by definition;
- Except a few many of these services are supporting only two objectives of a catalogue – ‘to find’ & ‘to select’ but not ‘to locate’
  - these services refer users to respective OPAC and thereby deviating from the basic objective of a DI – to provide bibliographic services in ‘single-window’;
  - OPAC functionalities are not there to serve users real-time item-level status, holds/reservations, profile management,login through ILS credentials etc
- VuFind may take care of all these OPAC functionalities as DI of a union catalogue, if configured in a multibackend driver environment to handle multiple backend ILSs; and
- DI and ILS connectivity approaches in VuFind have improved greatly in recent times.
  -

Generations of ILS Connectivities in VuFind

- DI to ILS connectivity in VuFind may be categorized under three groups (referred as 'three generations' here):
  - Generation I : 'Database Call' approach (supports real-time item-level status in DI through database level authentication and refers to respective ILSs for other OPAC functionalities – like holds placements, holds cancellation etc); [From beginning]
  - Generation II : 'ILS-DI' protocol based approach (supports real-time item-level status in DI through database level authentication and also provides basic OPAC functionalities within the DI – like holds placements, profile update etc);
    - [Release 3.1 – Sept. 26, 2016]
  - Generation III : REST based connectivity (support real-time item-level status in DI without database level authentication (through OAuth2) and also provide enhanced OPAC functionalities within the DI – like holds placements, holds cancellation, profile update, article request etc);
    - [VoyagerRestful (Release 2.3 – Aug. 11, 2014; SierraRest (Release 4.1 - Oct. 2, 2017); KohaRest (Release 7.0 – July 20, 2020]
  -
  -

Test Plan
(look before you leap)

- Objective is to improve present union catalogue scenario in India but first by developing a pilot study as showcase.
- ILS: Koha 20.05.04 (released on Sept, 22, 2020).
  - Reason: the only open source ILS with all three generations of protocol support (Database call, ILS-DI and REST).
- DI: VuFind 7.0.1 (released on Aug. 31, 2020).
  - Reason: the only open source DI with support for all three connectivity approaches to interact with the backend Koha instances.
- Environment: Multibackend driver to connect each instances of Koha representing participating libraries.
- Data gathering: Through OAI/PMH from the backend Koha instnaces .
- Test size: 6 university libraries with 1000 MARCXML bibliographic records from each library (just a prototype)
- Question: What connectivity approaches will be suitable for ‘DI to ILS’ linking?
- Method: Prepare a single central index for all six libraries (maintaining unique id for each instance of Koha) and test all three approaches in a multibackend driver based environment.

What is ILS-DI?

"From the standpoint of libraries it would be ideal to be able to **mix-and-match ILS and discovery platforms** to suit local needs. To create such a rich environment the library and vendor community will need agreement on the specific technical details of **how discovery and ILS systems** are to integrate."

- Peter Brantley, DLF Executive Director, 23/05/2007
- http://blogs.lib.berkeley.edu/shimenawa.php/2007/05/23/ils_abstracQon_api

Berkeley Accord, 2008

- Basic set of functionality essential for libraries to take advantage of new discovery systems (ILS-BDI)
- Agreement from April 4, 2008
- Harvesting
  - Full and incremental, bib and holdings/circ
- Availability
  - Real-time availability of item
- Linking
  - Stable link to item in OPAC providing request links

- Talis
- Ex Libris
- LibLime
- BiblioCommons
- SirsiDynix
- Polaris Library Systems
- VTLS
- California Digital Library
- OCLC
- AquaBrowser

ILS-DI Standard

DLF ILS Discovery Interface Task Group (ILS-DI) Technical Recommendation

An API for effective interoperation between integrated library systems and external discovery applications

June 4, 2008

ILS-DI Task Group Members

John Mark Ockerbloom, Univ. of Penn. (chair)

Terry Reese, Oregon State Univ.

Patricia Martin, California Digital Library

Emily Lynema, North Carolina State Univ.

Todd Grappone, Univ. of Southern California

Dave Kennedy, Univ. of Maryland

David Bucknum, Library of Congress

Dianne McCutcheon, National Library of Medicine

https://old.diglib.org/architectures/ilsdi/DLF_ILS_Discovery_1.0.pdf (June 2008)
https://old.diglib.org/architectures/ilsdi/DLF_ILS_Discovery_1.1.pdf (Dec. 2008)

ILS-DI: Twenty five functions under Four Groups

Group I

Data aggregation

- Bulk harvesting for external apps that maintain local indexes
  - Incremental harvesting by date added / last updated
- HarvestBibliographicRecords
- HarvestHoldingsRecords
- HarvestExpandedRecords
- HarvestAuthorityRecords

Group II

Real time search

- On the fly access to real time data
- On the fly lookup of original record
- Federated real time searching

- Identifer lookup
  - GetAvailability
  - GetRecords
  - GetAuthorityRecords
- Searching
  - Search
  - Scan
  - SearchCourseReserves

Group III

Patron functionality

- Patron authentication and account information
- Delivery functionality as managed by the ILS

- Patron Account
  - LookupPatron
  - AuthenticatePatron
  - GetPatronInfo
  - GetPatronStatus
  - RenewLoan
- Delivery
  - HoldTitle
  - HoldItem
  - CancelHold
  - RecallItem
  - CancelRecall

Group IV

OPAC embed / escape

- Support rewriting OPAC displays to include external content / services
- Support output transformation of OPAC displays for use outside of ILS
- Possible behaviors:
  - OutputRewritablePage
  - OutputIntermediateFormat

Koha REST endpoints
https://wiki.koha-community.org/wiki/REST_api_RFCs

56+ endpoints
As on Sept 25, 2K20

Version 1

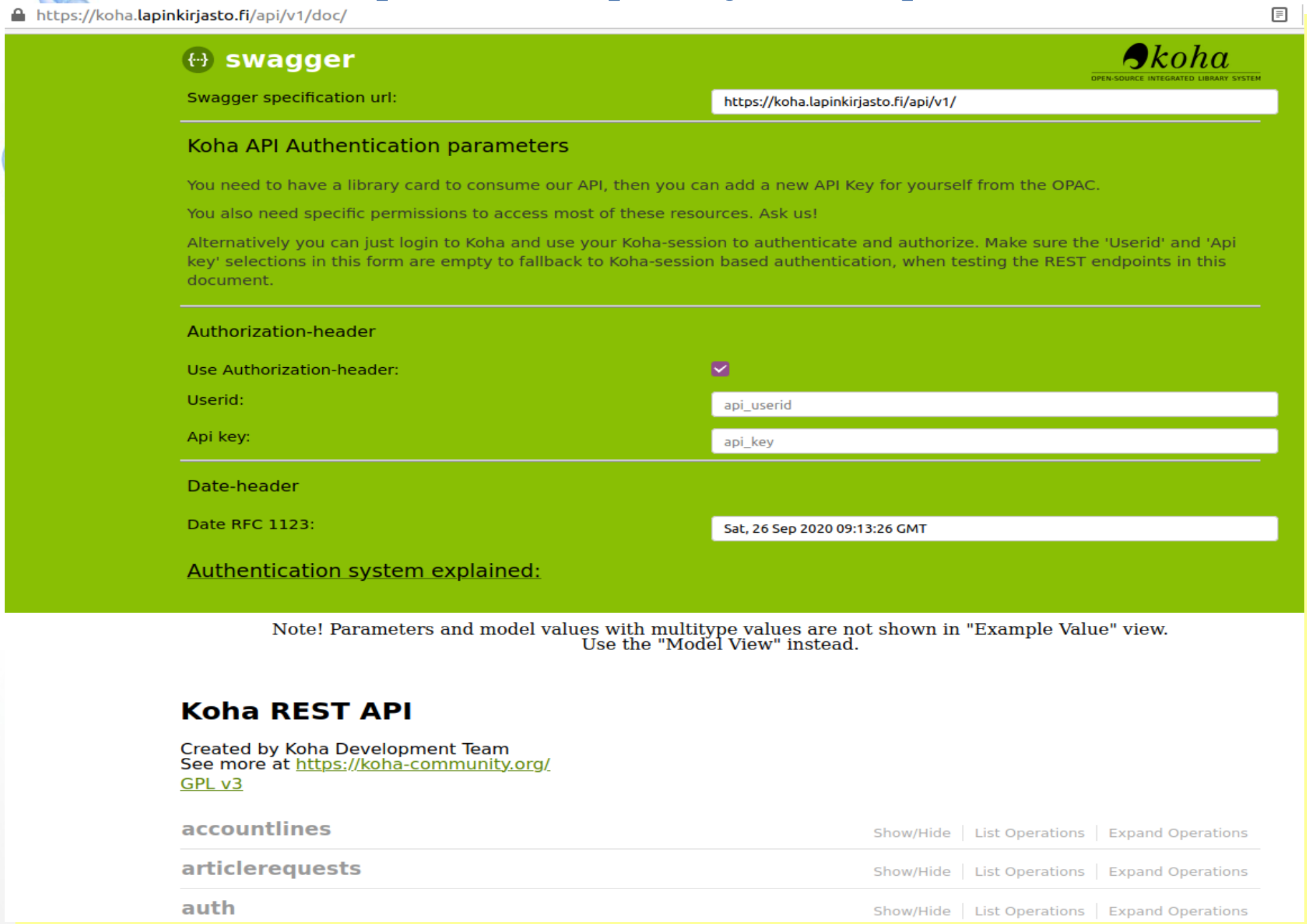
Still under development

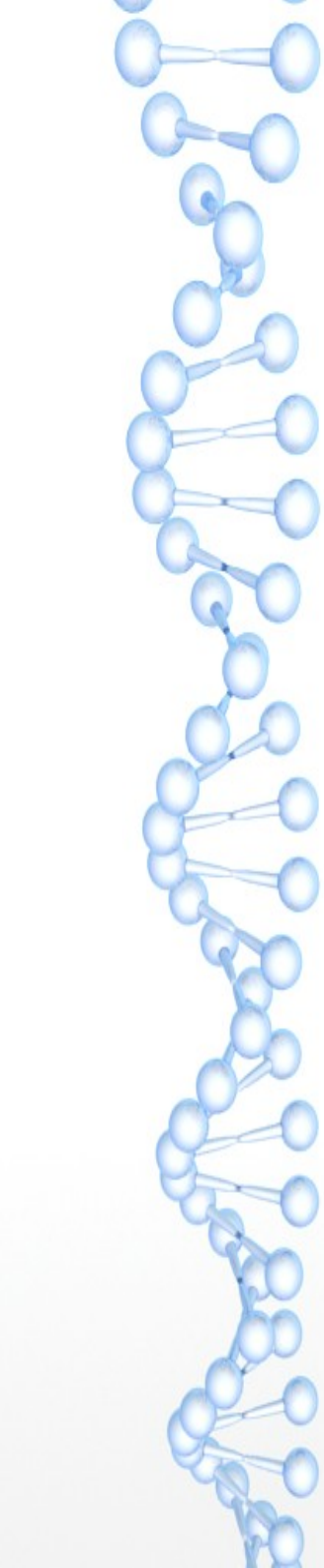
More REST endpoints will emerge

More OPAC functionalities at DI end

Endpoint	Decision status	Implementation status	Koha version
/account/lines	Voted		
/acquisitions/basket_groups			
/acquisitions/baskets			
/acquisitions/budgets			
/acquisitions/budgets/{budget_id}/funds			
/acquisitions/funds	Voted	Done (matts)	**19.05, 18.11.05**
/acquisitions/invoices	Voted		
/acquisitions/orders	Voted	Done (tcohen)	
/acquisitions/vendors	Voted	Done	**17.11**
/acquisitions/vendors/{vendor_id}/contacts			
/authorities			
/authorised_values		WIP	
/authorised_values_categories		WIP	
/biblios	Voted	Umbrella	
		GET Done (tcohen)	**19.11**
/biblios/ids			
/biblios/{biblio_id}/holds			
/biblios/{biblio_id}/items			
/biblios/{biblio_id}/pickup_locations			
/checkouts	Voted	Done	**19.05**
/checkouts/{checkout_id}/allows_renewal	Voted	Done	**19.11 19.05.03**
/cities	Voted	Done	**18.05**
/config/smtp_servers	Scheduled		
/holds	Voted	Done (tcohen)	**19.05**
/holds/{hold_id}/priority		Done (tcohen)	**19.11**
/holds/{hold_id}/suspension	Voted	Done (tcohen)	**19.05**
/ill_backends	Voted	Assigned (josef.moravec)	
/ill_requests			
/import/oaipmh/biblios		WIP (dcook)	
/import_batch_profiles		WIP (amoyano)	
/items			
/items/{item_id}/pickup_locations			

Test site
https://koha.lapinkirjasto.fi/api/v1/doc/





OAI/PMH vs ILSDI vs REST

http://localhost:7001/cgi-bin/koha/oai.pl?verb=ListRecords&metadataPrefix=oai_dc

<oai_dc:dc xsi:schemaLocation="http://www.openarchives.org/OAI/2.0/oai_dc/ http://www.openarchives.org/OAI/2.0/oai_dc.xsd">
<dc:title>Beyond book indexing /</dc:title>
<dc:creator>
Brenner, Diane.
5
</dc:creator>
<dc:creator>
Rowland, Marilyn.
6
</dc:creator>
<dc:type>text</dc:type>
<dc:publisher>Phoenix, AZ : American Society of Indexers,</dc:publisher>
<dc:date>2000.</dc:date>
<dc:language>eng</dc:language>
<dc:description>Includes bibliographical references and index.</dc:description>
<dc:description>Preface / Enid L. Zafran -- Introduction / Diane Brenner & Marilyn Rowland -- Contributors -- Pt. 1. Beyond stand-
alone indexes: The world of embedded indexing / Jan C. Wright ; Indexing computer-
related documents / Lynn Moncrief -- Pt. 2. Beyond the book: Subject-
oriented web indexing / Dwight Walker ; Web indexing-- anchors away! / Kevin Broccoli & Gerry Van Ravenswaay ; Ripping out the pages / Seth Maislin ; F
based indexing: <Meta> tags / Marilyn J. Rowland ; Envisioning the word / X Bonnie Woods ; How to index windows-
based online help / Susan Holbert -- Pt. 4. Beyond traditional marketing: Web site design for indexers / Marilyn J. Rowland ; Putting sample indexes on your we
</dc:description>
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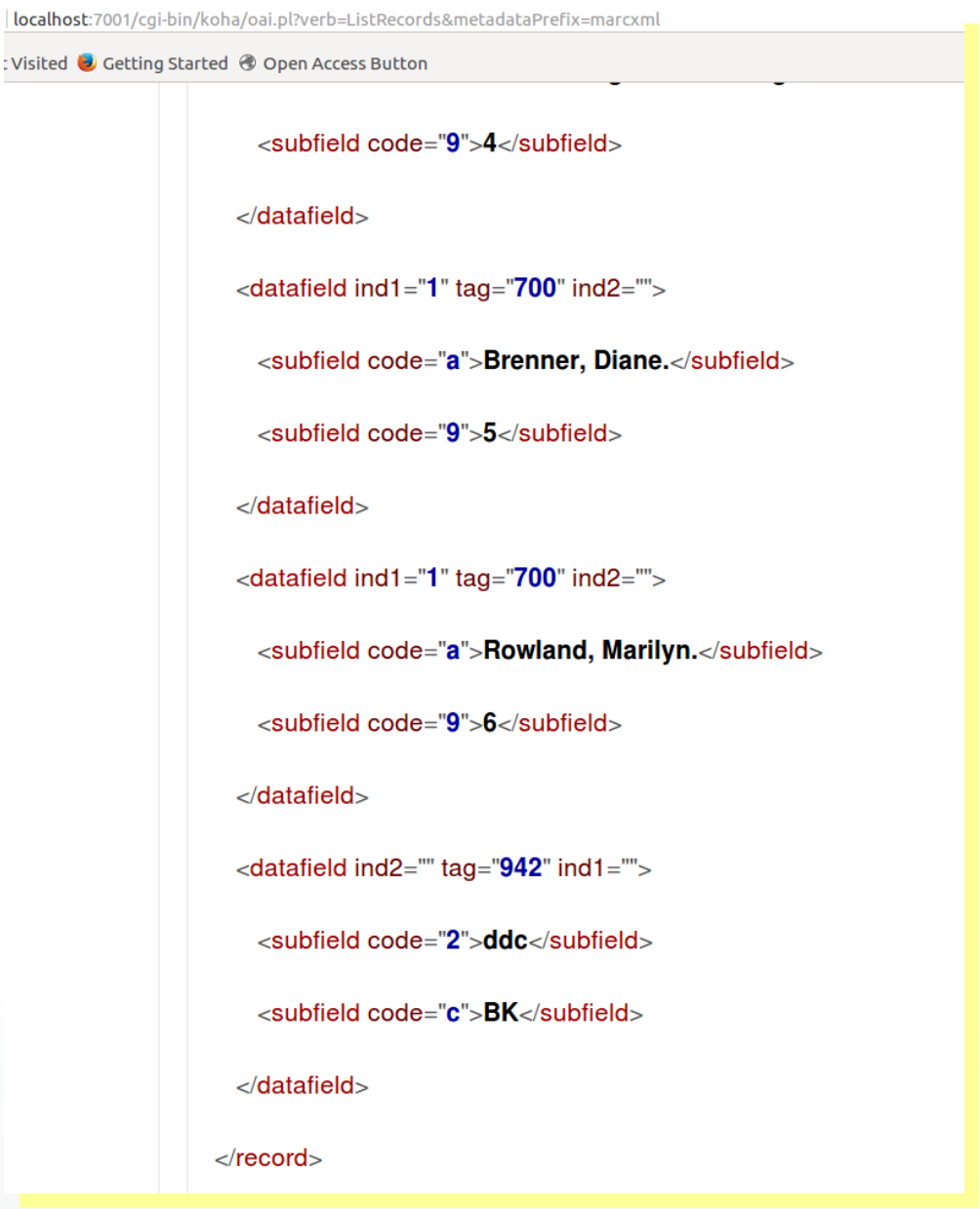
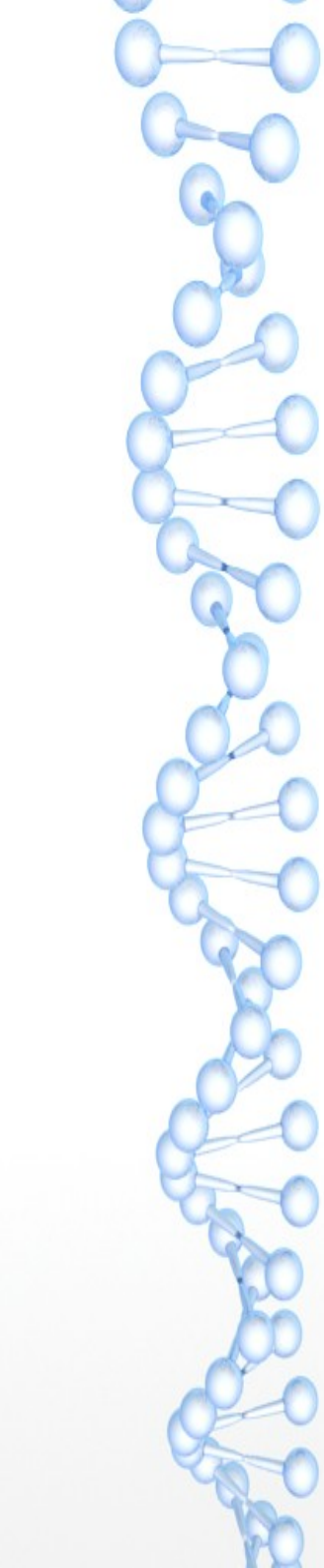
<dc:subject>Computer network resources</dc:subject>
<dc:subject>Electronic information resources</dc:subject>
<dc:subject>Web sites</dc:subject>
<dc:identifier>URN:ISBN:1573870811</dc:identifier>
</oai_dc:dc>

http://localhost:7001/cgi-bin/koha/oai.pl?verb=ListRecords&metadataPrefix=marcxml





What ILS-DI can do additionally?

http:///localhost:7001/cgi-bin/koha/ilsdi.pl

ILS-DI

Level 1: Basic discovery interfaces

- HarvestBibliographicRecords *(Use OAI-PMH instead)*
- HarvestExpandedRecords *(Use OAI-PMH instead)*
- GetAvailability
- GoToBibliographicRequestPage *(Use OPAC instead)*

Level 2: Elementary OPAC supplement

- HarvestAuthorityRecords *(Use OAI-PMH instead)*
- HarvestHoldingsRecords *(Use OAI-PMH instead)*
- GetRecords
- Search *(Use SRU instead)*
- Scan *(Use SRU instead)*
- GetAuthorityRecords
- OutputRewritablePage *(Not supported yet)*
- OutputIntermediateFormat *(Not supported yet)*

Level 3: Elementary OPAC alternative

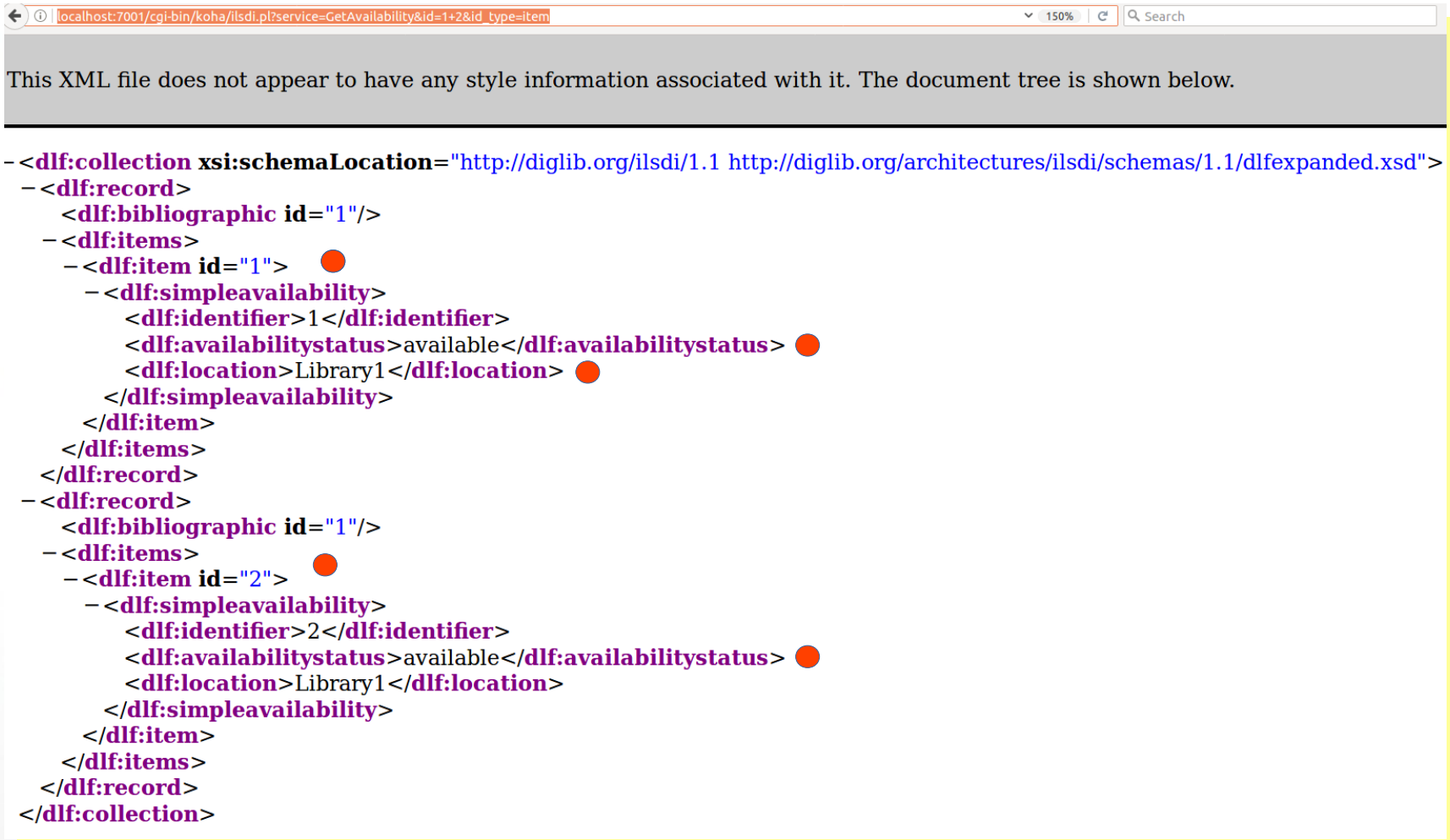
- LookupPatron
- AuthenticatePatron
- GetPatronInfo
- GetPatronStatus
- GetServices
- RenewLoan
- HoldTitle
- HoldItem
- CancelHold
- RecallItem *(Not supported by Koha)*
- CancelRecall *(Not supported by Koha)*

Level 4: Robust/domain specific discovery platforms

- SearchCourseReserves *(Not supported yet)*
- Explain *(Not supported yet)*

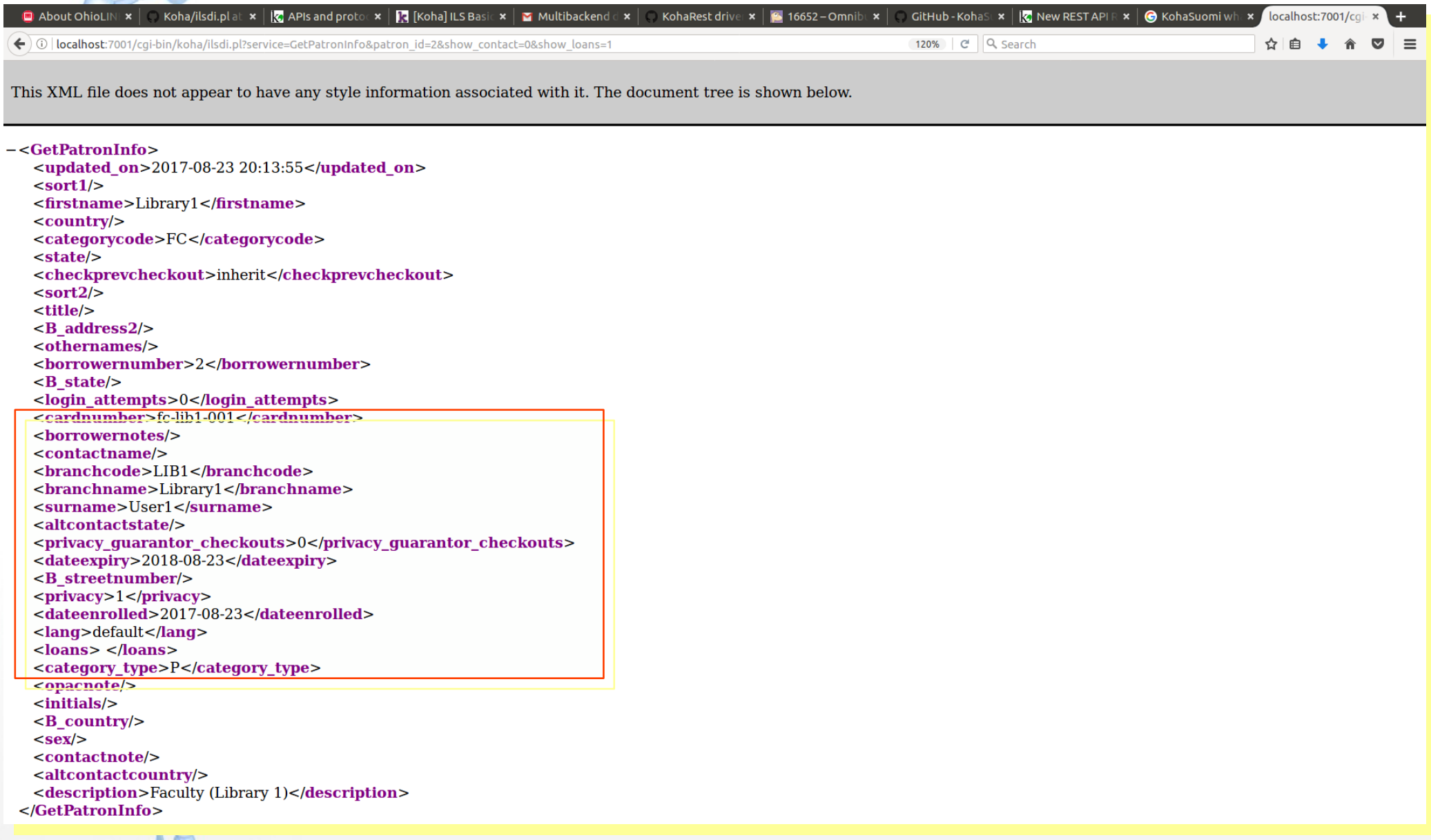
ILS-DI call in Koha

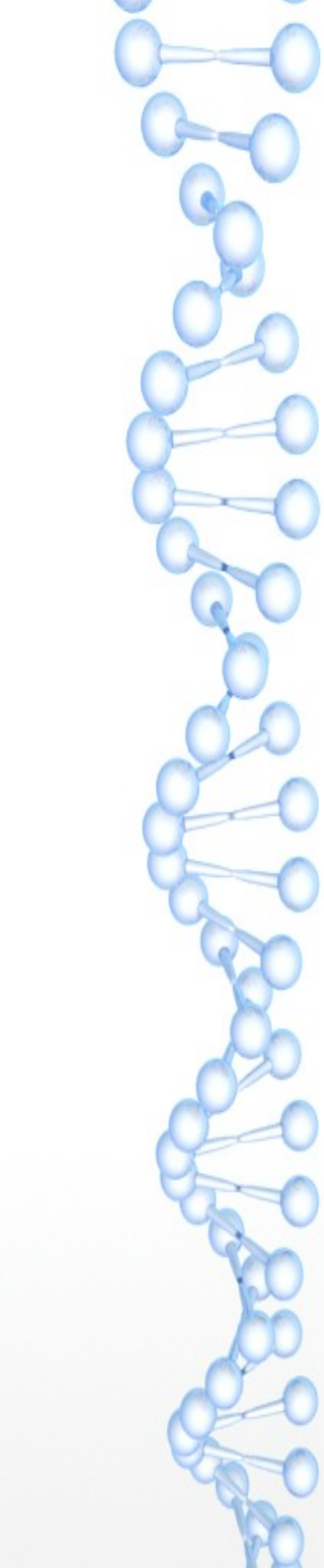
http://localhost:7001/cgi-bin/koha/ilsdi.pl?service=GetAvailability&id=1+2&id_type=item



ILS-DI call for Patron Information

http://localhost:7001/cgi-bin/koha/ilsdi.pl?service=GetPatronInfo&patron_id=2&show_contact=0&show_loans=1

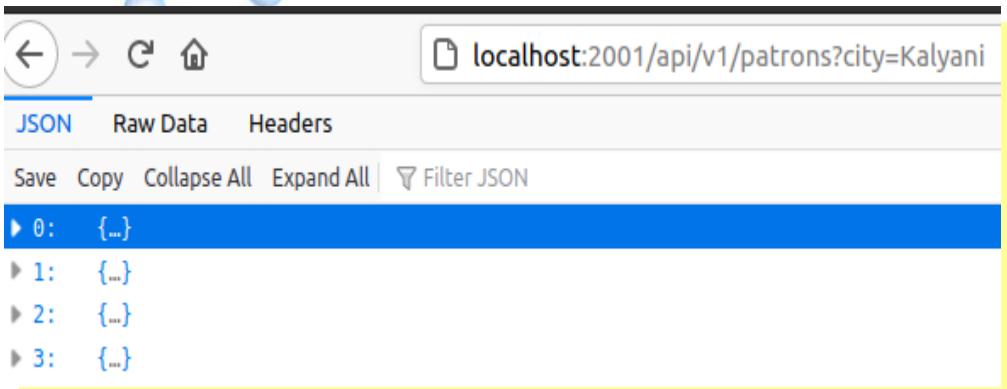


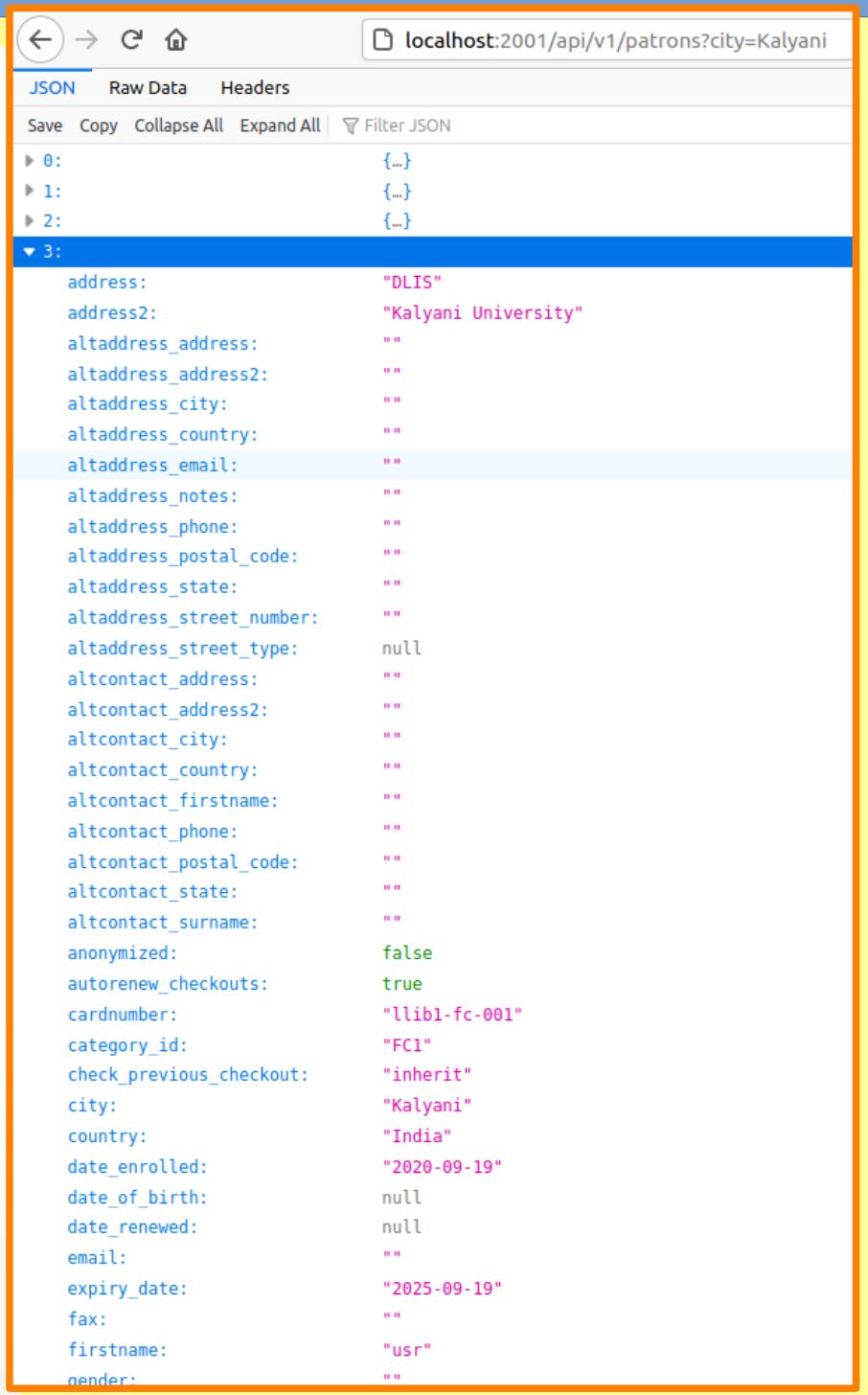


What REST API can do additionally?

- More and more End points
- Return data in JSON
- Can be more dynamic
- Conditions can be added

http://localhost:2001/api/v1/patrons?city=Kalyani



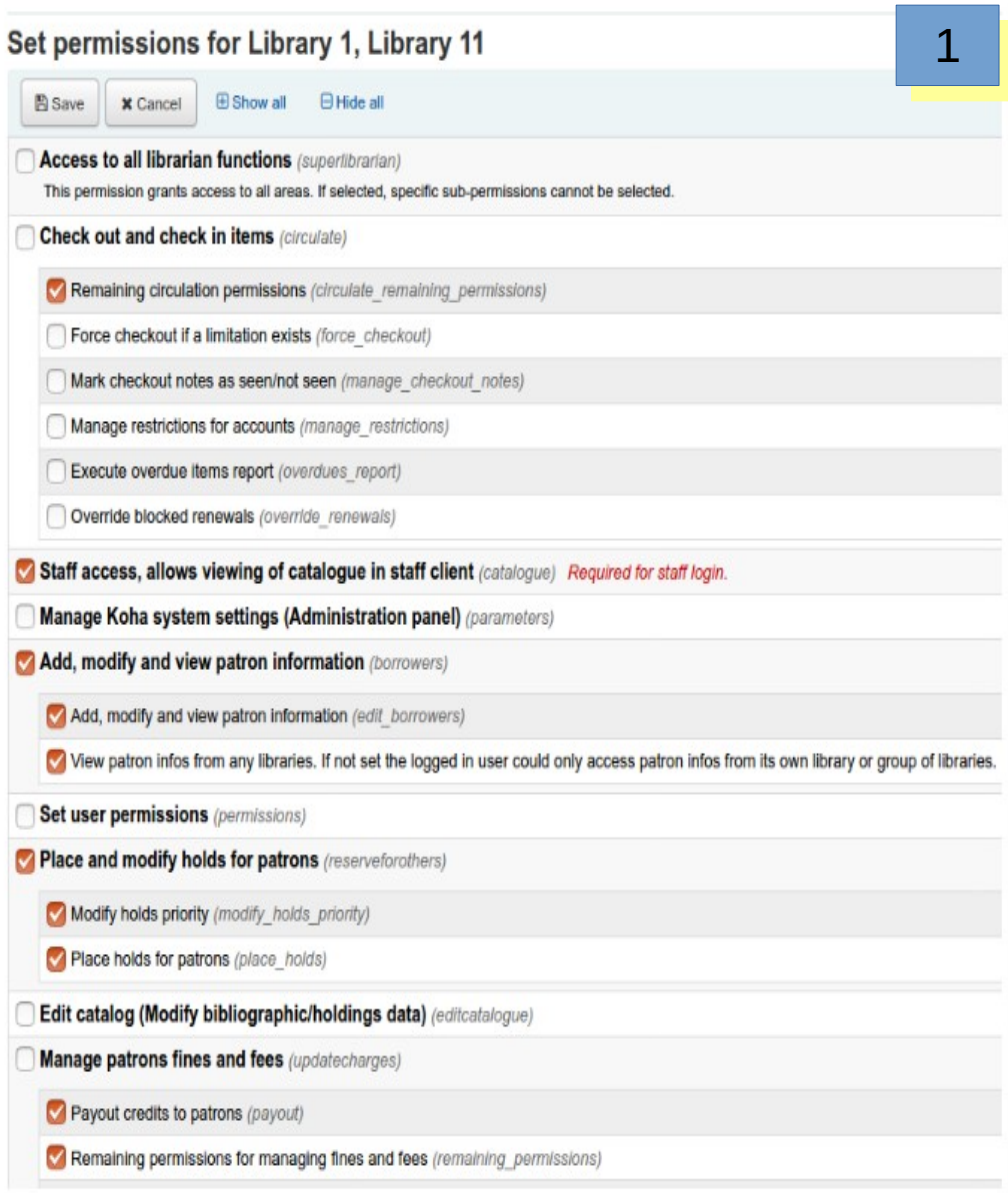


METHOD IN BRIEF

Layer	Standard	Services	Tasks
ILS layer	OAI/PMH version 2.0	Enable OAI/PMH web service in Koha 20.05.04	1. Enable OAI/PMH, set archive ID and enable OAI-PMH:AutoUpdateSets 2. Check response
	ILS-DI recommendation version 1.1	Enable ILS-DI web service in Koha 20.05.04	1. Enable ILS-DI 2. Check responses.
	REST API v1	Enable REST response and RESTOAuth2ClientCredentials in Koha 20.05.04	1. Enable REST related options 2. Create a user with minimum permission (as presecribed) and generate client id & client secret
Middle layer	ILS-DI	Multibackend driver on the basis of ILS-DI	No additional tasks
	Koha-Rest-Plugin	Multibackend driver on the basis of REST/API	Install Koha-rest-plugin (we used ver. 0.8.6) in Koha ILS koha-plugin-rest-di
Discovery layer	OAI/PMH version 2.0	Harvester in VuFind 7.0.1	1. Set sections for each instance in oai.ini for harvesting bibliographic data in marcxml 2. Harvest each library
	Indexing	Batch-import-march.sh in Vufind 7.0.1	1. Create separate import-properties file and marc-local properties file 2. Index each library with -p switch to call respective import-properties file
	Koha database call	Koha driver in VuFind 7.0.1	Create separate KohaI driver for each library
	ILS-DI	KohaILSDI driver in VuFind 7.0.1	Create separate KohaILSDI driver for each library
	KohaRest driver	KohaRest driver in VuFind 7.0.1	Create separate KohaRest driver for each library
	Multibackend	Multibackend driver in VuFind 7.0.1	Create three sets of Multibackend drivers for handling three generation of connectivities – Koha, KohaILSDI and KohaRest

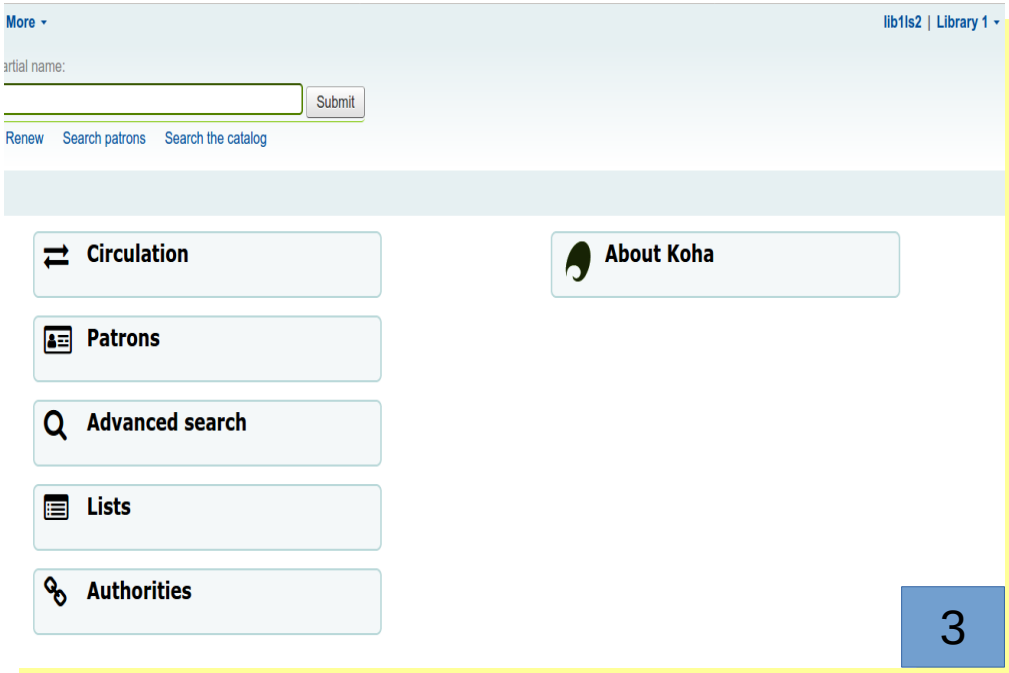
Issue 0 : Creation of REST API user with prescribed minimum permission

1



2

3



Issue 1

How to provide Unique id for records from different Koha instances?

Koha Instance 1 | Koha Instance 2 | Koha Instance 3 | Koha Instance 4 | Koha Instance 5 | Koha Instance 6

/opac-detail.pl?biblionumber=**2**

marc_local_kohails1.properties

collection = "Catalogue - Kalyani University"
institution = "Kalyani University"
building = "Central Library, Kalyani University"
id = 999c, (pattern_map.id_prefix), first
pattern_map.id_prefix.pattern_0 = (.+)=>**KohaILS1.$1**

marc_local_kohails2.properties

collection = "Catalogue - Burdwan University"
institution = "Burdwan University"
building = "Central Library, Burdwan University"
id = 999c, (pattern_map.id_prefix), first
pattern_map.id_prefix.pattern_0 = (.+)=>**KohaILS2.$1**

import-kohails1.properties

solr.indexer.properties =
marc.properties,
marc_local_kohails1.properties

import-kohails2.properties

solr.indexer.properties =
marc.properties,
marc_local_kohails2.properties

Indexing / Importing

./batch-import-marc.sh **-p** /usr/local/vufind/local/import/**import-kohails1.properties** KohaILS1

./batch-import-marc.sh **-p** /usr/local/vufind/local/import/**import-kohails2.properties** KohaILS2

http://localhost/vufind/Record/KohaILS1.2

localhost/vufind/Record/KohaILS1.2

vufind
Search. Discover. Share.

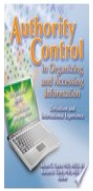
Login Theme Language

LfL Discovery

Enter search terms to discover LfL... All Fields Find Advanced

/ Authority control in organizin... / Holdings

Cite this Text this Email this Print Export Record Save to List



Authority control in organizing and accessing information : definition and international experience /

Other Authors:	Taylor, Arlene G., 1941-, Tillett, Barbara B., Guerrini, Mauro, 1953-, Baca, Murtha.
Format:	Book
Language:	English
Published:	Binghamton, NY : Haworth Information Press, c2004.
Subjects:	Authority files (Information retrieval) > Congresses.
Online Access:	Fulltext
Tags:	No Tags, Be the first to tag this record! Add Tag

Holdings Description Table of Contents Comments Preview Similar Items Staff View

Login for hold and recall information

Internet

Fulltext

Library 1

Call Number:	025.3/222 TAY/A
Copy	Available
Copy	Available

Similar Items

Logic and the organization of information /
by: Frické, Martin.
Published: (2012)

Successes and failures of digital libraries /
Published: (2000)

Advances in music information retrieval /
Published: (2010)

An automation primer for school library media centers and small libraries /
by: Schultz-Jones, Barbara.
Published: (2006)

Advanced approaches to intelligent information and database systems /
Published: (2014)

http://localhost/vufind/Record/KohaILS2.2

localhost/vufind/Record/KohaILS2.2

vufind
Search. Discover. Share.

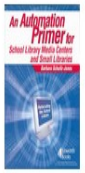
Login Theme Language

LfL Discovery

Enter search terms to discover LfL... All Fields Find Advanced

/ An automation primer for schoo... / Holdings

Cite this Text this Email this Print Export Record Save to List



An automation primer for school library media centers and small libraries /

Main Author:	Schultz-Jones, Barbara.
Format:	Book
Language:	English
Published:	Worthington, Ohio : Linworth Pub., c2006.
Subjects:	School libraries > Automation. Instructional materials centers > Automation. Small libraries > Automation. School libraries > Information technology. Instructional materials centers > Information technology. Small libraries > Information technology. Integrated library systems (Computer systems)
Tags:	No Tags, Be the first to tag this record! Add Tag

Holdings Description Table of Contents Comments Similar Items Staff View

Login for hold and recall information

Library 2

Call Number:	027.8/0285 SCH/A
Copy	Available
Copy	Available

Similar Items

Library automation and OPAC 2.0 : information access and services in the 2.0 landscape /
Published: (2013)

Information technology and library automation /
by: Devarajan, G., 1947-, et al.
Published: (2014)

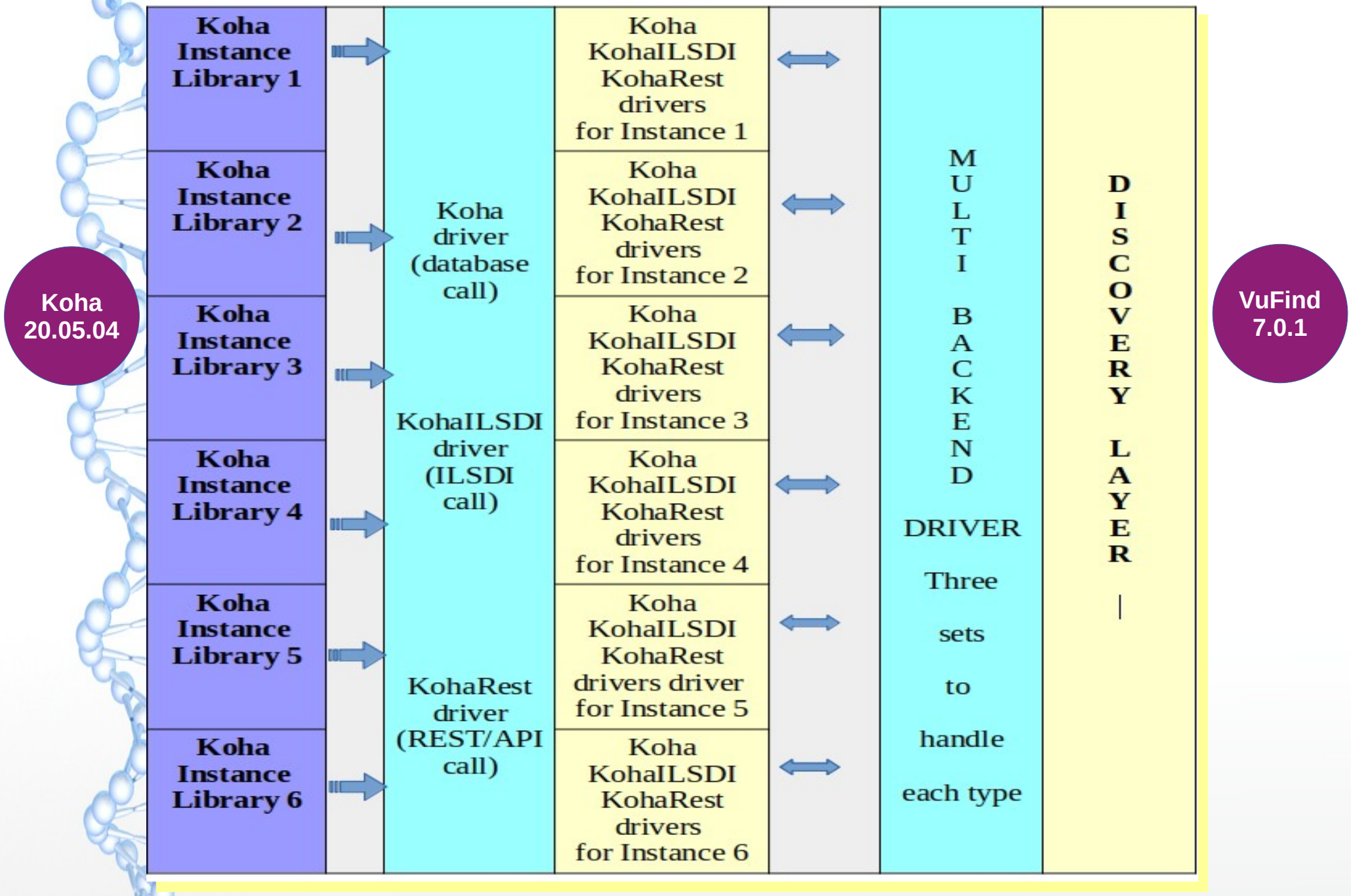
Information resource description : creating and managing metadata /
by: Hider, Philip, 1971-
Published: (2013)

Successes and failures of digital libraries /
Published: (2000)

The Evolution of library automation : management issues and future perspectives /
Published: (1991)

Issue 2: The Multibackend environment

How to handle multiple ILS drivers (Koha, KohaILSDI, KohaRest) at the DI end?



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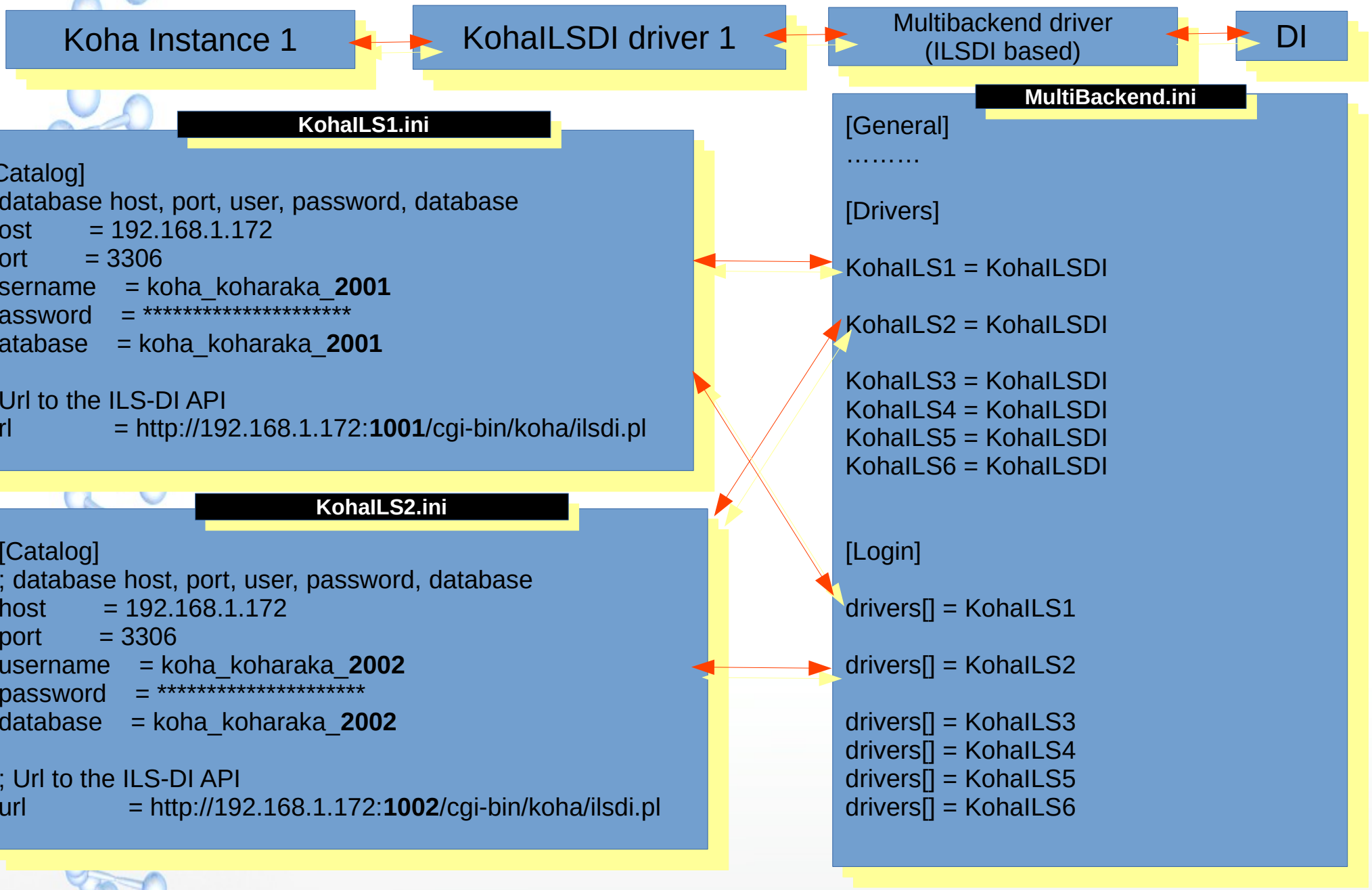
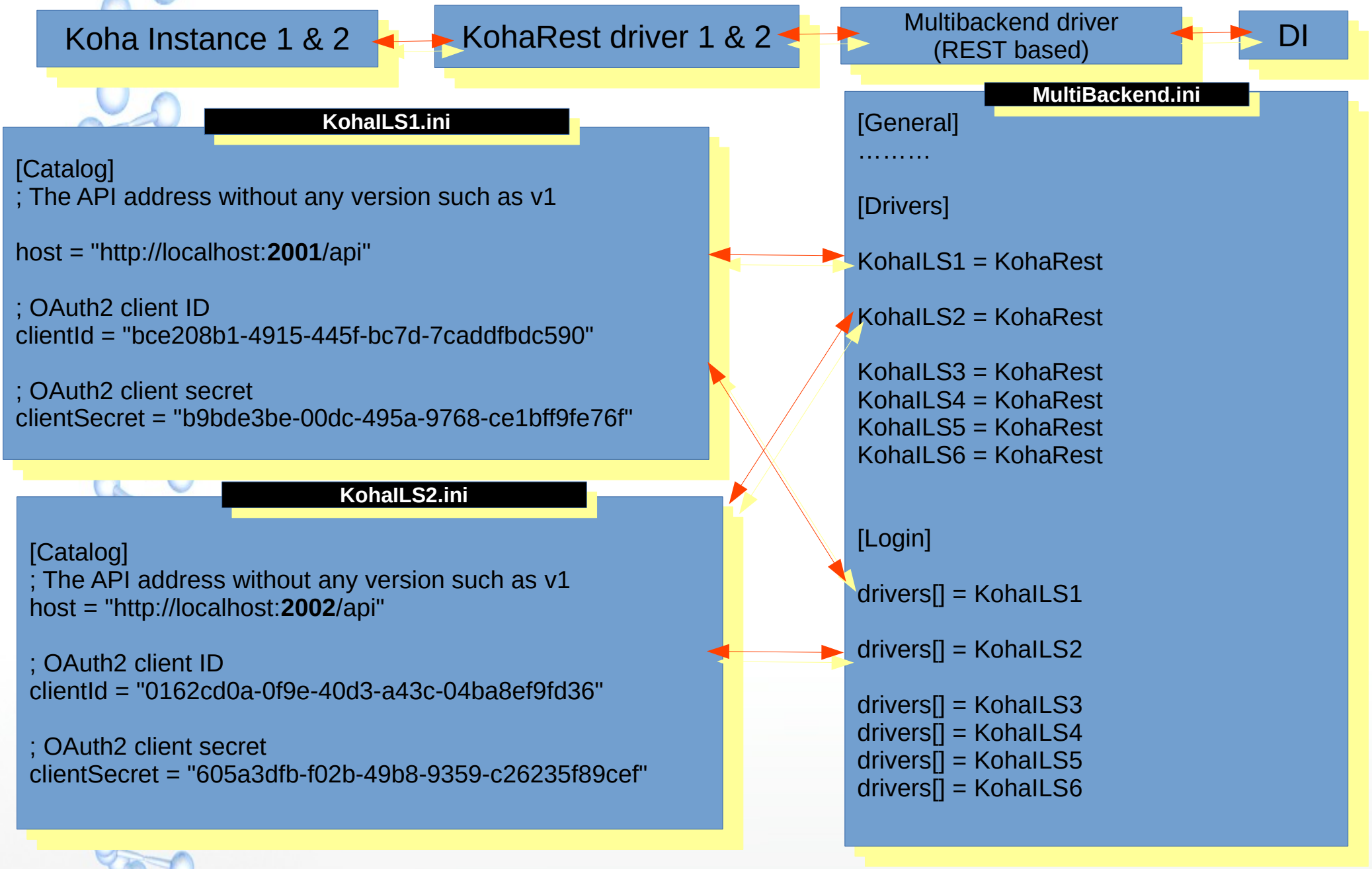
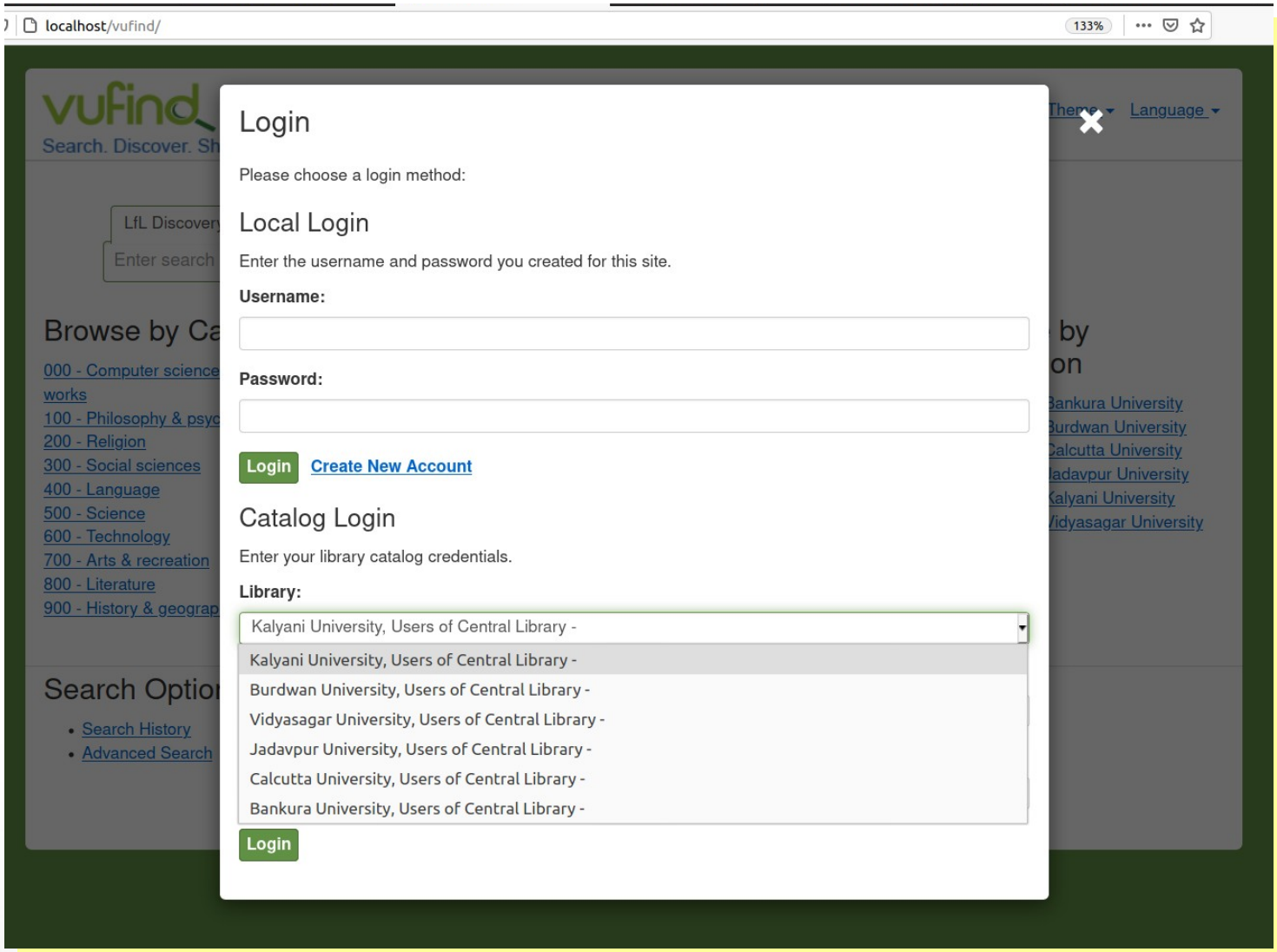


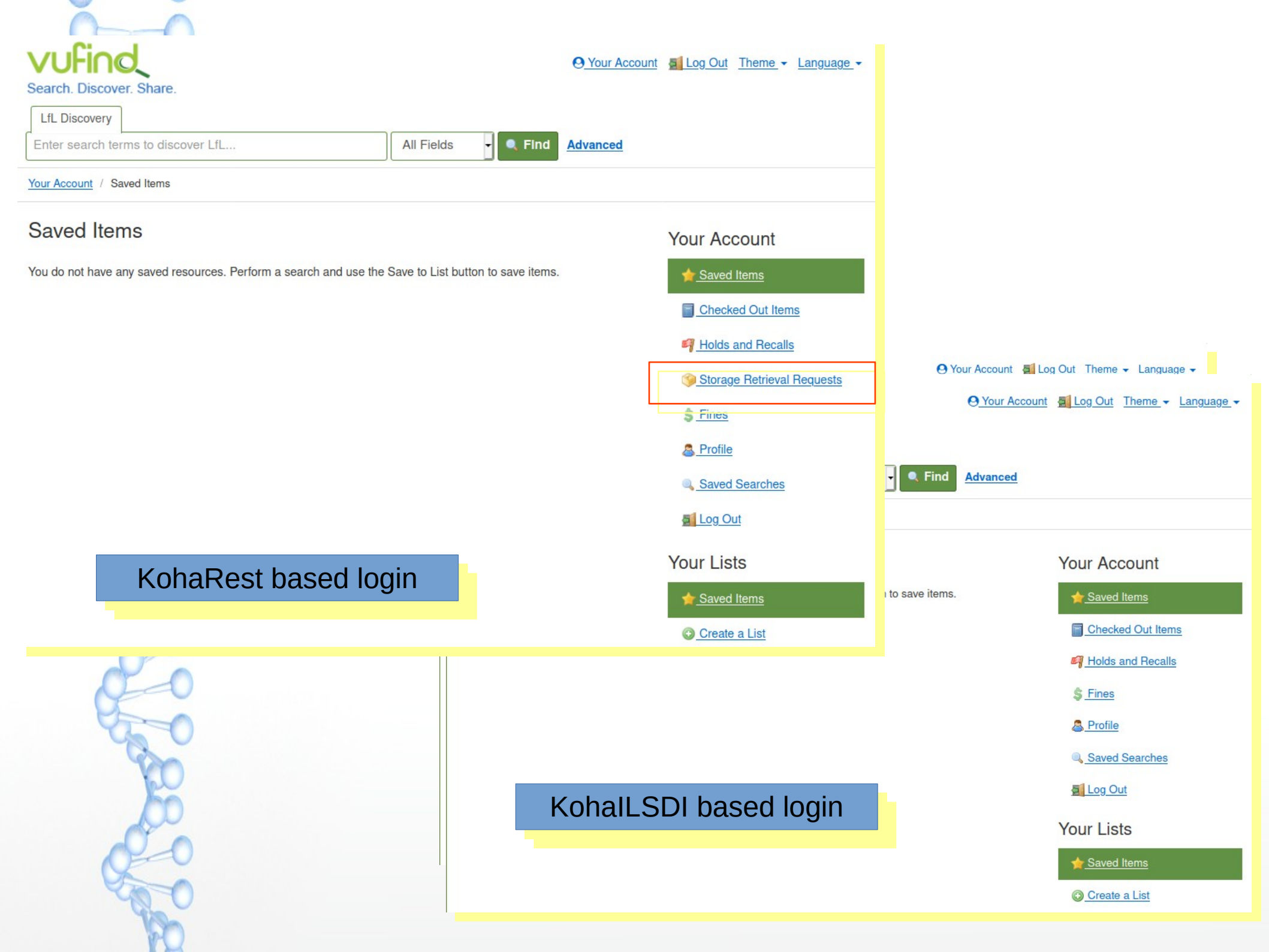
Issue 2: The Multibackend environment
How to handle multiple ILS drivers (Koha, KohaILSDI, KohaRest) at the DI end?



Login facility in Multibackend driver mode for all three generations

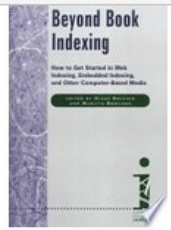


Users can access DI by using their respective ILSs login


vufind
Search. Discover. Share.
Your Account
Log Out
Theme
Language
LfL Discovery
Enter search terms to discover LfL...
All Fields
Find
Advanced
Your Account / Saved Items
Saved Items
You do not have any saved resources. Perform a search and use the Save to List button to save items.
Your Account
Saved Items
Checked Out Items
Holds and Recalls
Storage Retrieval Requests
Fines
Profile
Saved Searches
Log Out
Your Lists
Saved Items
Create a List
KohaRest based login
KohaILSDI based login

Real-time status from different libraries in Multibackend enviromnet

localhost/vufind/Search/Results?lookfor=web+indexing&type=AllFields&filter[]=format%3A"Book"



Beyond book indexing /
Published 2000
Table of Contents: "... documents / Lynn Moncrief -- Pt. 2. Beyond the book: Subject-oriented web indexing / Dwight Walker ; Web ..."
Call Number: 025.3/0285 BRE/B
Located: Library 1
Text analysis
Book

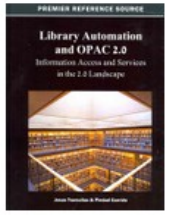
Show QR Code
Save to List

2 Implementing web-scale discovery services : a practical guide for librarians /

Implementing web-scale discovery services : a practical guide for librarians /
by Thompson, JoLinda
Published 2014
Table of Contents: "...The evolution of Web-scale discovery in libraries -- A closer look at Web-scale discovery options..."
Call Number: 025.04
Located: Library 3
Book Available

Show QR Code
Save to List

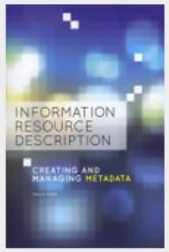
3



Library automation and OPAC 2.0 : information access and services in the 2.0 landscape /
Published 2013
Table of Contents: "... of Web 2.0 users? : a year after / Birong Ho -- Quantitative approach applied to user interface of Latin..."
Call Number: 025.3/13 TRA/L
Located: Library 2
Book Available

Show QR Code
Save to List

4



Information resource description : creating and managing metadata /
by Hider, Philip, 1971-
Published 2013
Table of Contents: ".... Tools and systems. Arrangements ; Indexes and databases ; Bibliographic databases ; Library catalogues..."
Call Number: 025.3 HID/I
Located: Library 1
Book Available

Show QR Code
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Jadavpur University 1
Vidyasagar University 1

Library
Central Library, Burdwan University 3
Central Library, Kalyani University 3
Central Library, Jadavpur University 1
Central Library, Vidyasagar University 1

Format
Book

Call Number
000 - Computer science, information & general works 7
600 - Technology 1

Author
American Library Association 1
Ashraf, Tariq, 1961- 1
Baca, Murtha 1
Brenner, Diane 1
Dunwen, Zuo 1
Guerrini, Mauro, 1953- 1

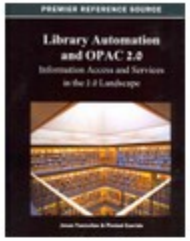
Results

- Security and confidence building in partners
  - In case of ‘Koha database’ call and ‘KohaILSDI’ approaches, partners need to share Koha database admin credentials (or user having access to Koha database, not even superlibrarian password will do);
    - A bit risky for a partnerships based initiative like union catalogue;
  - In case of ‘KohaRest’ approach, partners need to share only client id & client secret (with minimum privileges) for OAuth2 protocol based access to Koha dataabse through koha-rest-plugin;
    - A revolutionary improvement in security over the Gen I and Gen II approaches and can build necessary confidence among partners;

Results

- Enhanced OPAC functionalities
  - ‘Koha database’ call provides – ILS based login and can retrieve dataset like ‘checked out items’, ‘Loan history’, ‘Holds & Recalls’ and ‘Fines’ from the ILS dynamically; can see brief user profile but
    - Can’t Place or Cancel holds in Multibackend driver mode;
    - Can’t change/modify user profile;
    -
  - ‘KohaILSDI’ approach supports all the activities as supported by ‘Database call’ approach and additionally provides features like – Holds placement, Recall, Profile update (password change option) but
    - Holds cancellation is not allowed;
    - Article request facility not available;
  - ‘KohaRest’ driver apart from supporting all the features as available in Gen I & Gen II drivers also extends supports for – Holds cancellation, Extensive profile data and Storage Retrieval Requests but
    - Bit slower in transferring datasets from ILS in comparison with Gen I & Gen II drivers
    - Password change option is not there like KohaILSDI.

KohaRest driver | Detail page



Library automation and OPAC 2.0 : information access and services in the 2.0 landscape /

"This book brings library automation back to the forefront of cutting-edge research, encompassing today's age of Web 2.0 and social networking"--Provided by publisher.

Format:	Book
Language:	English
Published:	Hershey PA : Information Science Reference, [2013]
Subjects:	Online library catalogs. Libraries > Automation. Libraries > Information technology. Library science > Computer programs. Web 2.0.
Tags:	No Tags, Be the first to tag this record! Add Tag

Holdings | Description | Table of Contents | Comments | Similar Items | Staff View

Place a Title Level Request

Library 2

Call Number:	025.3/13 TRA/L
Copy	Available Place a Hold Place a Storage Retrieval Request
Copy	Available Place a Hold Place a Storage Retrieval Request

Similar Items

Automated library systems : a librarian's guide and teaching manual /
by: Duval, Beverly K.
Published: (1992)

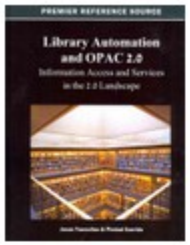
Implementing web-scale discovery services : a practical guide for librarians /
by: Thompson, JoLinda,
Published: (2014)

A Reader on choosing an automated library system /
Published: (1983)

Implementing the automated library system /
by: Corbin, John
Published: (1988)

An automation primer for school library media centers and small libraries /
by: Schultz-Jones, Barbara.
Published: (2006)

KohaILSDI driver | Detail page



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Tags:	No Tags, Be the first to tag this record! **Add Tag**

Holdings | Description | Table of Contents | Comments | Similar Items | Staff View

Place a Title Level Request

General Stacks

Call Number:	025.3/13 TRA/L
Copy c1	Available Place a Hold
Copy c1	Available Place a Hold

Similar Items

Automated library systems : a librarian's guide and teaching manual /
by: Duval, Beverly K.
Published: (1992)

Implementing web-scale discovery services : a practical guide for librarians /
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by: Schultz-Jones, Barbara.
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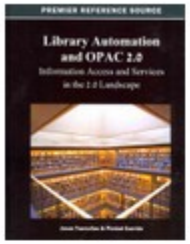
Koha driver | Detail page



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Tags:	No Tags, Be the first to tag this record! Add Tag

Holdings | Description | Table of Contents | Comments | Similar Items | Staff View

Library 2: General Shelf

Call Number:	025.3/13 TRA/L
Copy c1	Available
Copy c1	Available

Similar Items

Automated library systems : a librarian's guide and teaching manual /
by: Duval, Beverly K.
Published: (1992)

Implementing web-scale discovery services : a practical guide for librarians /
by: Thompson, JoLinda,
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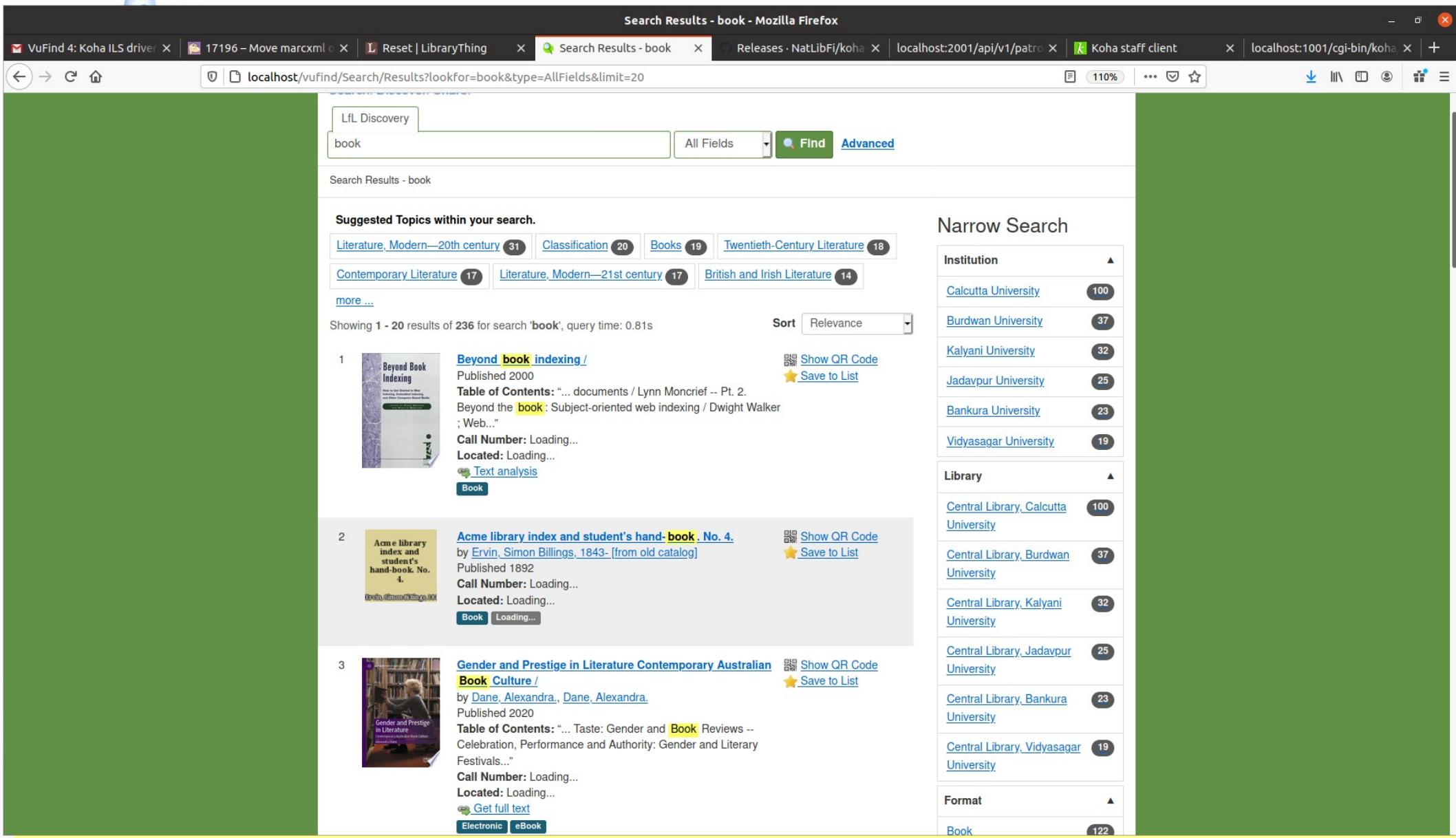
Published: (1988)

An automation primer for school library media centers and small libraries /
by: Schultz-Jones, Barbara.
Published: (2006)

KohaRest is the champion but ….



A search involving documents from all Six libraries takes almost 30 seconds to upload real-time item-level status for set 1 (20 retrieved records) for a total of 12 sets (236 retrieved records) but availability status in detail page is instantaneous.

Conclusion …..

- It is too early to conclude as KohaRest is only 3 months old but the conceptual framework that supports REST based interaction between VuFind and Koha is brilliant;
- KohaRest is more secured approach in a multi ILS environment in comparison with KohaILSDI and Koha drivers;
- KohaRest does not require additional configuration in Mysql/MariaDB when Koha instances are in different machines, whereas KohaILSDI and Koha drivers need this additional work;
- KohaRest is independent of structural changes in Koha side whereas KohaILSDI and Koha drivers need adjustments with changes in Koha side (for example, in VuFind 4.1 KohaILSDI required major changes when Koha community decided to remove marcxml out of the biblioitems table in Koha 17.05 – see https://github.com/vufind-org/vufind/pull/1007);
- REST endpoints at Koha side will be growing with the time (unlike fixed 25 parameters in ILSDI) and more and more OPAC functionalities will be added in KohaRest driver in future (you have already noticed the ‘article request’ option in KohaRest);
- At this point of time KohaRest driver is bit slower in comparison with KohaILSDI and Koha drivers but I am sure it will be solved in the forthcoming version VuFind 7.2; and
- De-duplication and FRBRized display may be the next target for such a framework.

Thank you...

Parthasarathi Mukhopadhyay (psmukhopadhyay@gmail.com)

Stay Safe

Special thanks to: Demian Katz and Ere Maijala for their help and guidance.