



Intrallect intraLibrary 2.8: Integration Guide

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Company: [Intrallect Ltd](#)

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Table Of Contents

1. Introduction.....	3
2. Open Archive Initiative - Protocol for Metadata Harvesting	3
2.1. Entry Point	4
2.2. Metadata Formats.....	4
2.3. Testing	4
3. Search and Retrieve Service	4
3.1. SRU	5
3.2. SRW.....	5
3.3. Queries	5
3.4. Metadata formats	6
3.5. Conformance	6
4. File transfer.....	6
5. IMS DRI.....	7
6. Repository Java-API.....	7
7. Future Developments	7
8. References	8

1. Introduction

This guide is for those responsible for managing software system which will need to integrate with intraLibrary.

The following integration points are described in this guide.

Metadata Harvesting

The metadata harvesting interface, based on the Open Archive Initiative - Protocol for Metadata Harvesting ([OAI-PMH](#)), allows the metadata from intraLibrary to be harvested in XML form for use in other systems such as catalogues, aggregators and archives.

Search and Retrieve

The Search and Retrieve URL (SRU) and Search and Retrieve Web-Service (SRW) are related specifications, which both support searching a remote catalogue and retrieving search results.

File Transfer

How organisations can automate the upload of packages and files.

Digital Repositories Interoperability

This interface offers a subset the repository services defined in the [IMS Digital Repositories Interoperability Specification](#).

Repository Java-API

Deeper access to the underlying functionality of intraLibrary, used for writing custom integration tools and extensions.

Authentication

Various ways intraLibrary can share and exchange user authentication information with other systems.

2. Open Archive Initiative - Protocol for Metadata Harvesting

An IntraLibrary repository can expose metadata for harvesting by other systems, using the OAI-PMH . This section describes how intraLibrary supports OAI-PMH. For full details of the protocol visit the [OAI web site](#).

By default, the collections managed in an intraLibrary are not harvestable. An

administrator-class user of intraLibrary can make a collection harvestable changing a single property of the collection.

2.1. Entry Point

The entry point for harvesting metadata under OAI-PMH is from intralibrary is the root URL for the intraLibrary installation, with `/IntraLibrary-OAI` appended to it:

`http://<intralibrary-root>/IntraLibrary-OAI`

2.2. Metadata formats

Metadata can be harvested in the following formats:

2.3. Testing

You can test the harvestability of a repository using the [OAI Registry Explorer](#). This allows you to send commands to intraLibrary. Type in the URL including `/IntraLibrary-OAI` and then you can select commands such as "Identify", "List Metadata Formats", etc. Note that for some commands you need to use parameters.

3. Search and Retrieve Service

IntraLibrary supports two related specifications for search and retrieve services, both open specifications published by the Library of Congress:

- [Search and Retrieve URL \(SRU\)](#)
- [Search and Retrieve Web-Service \(SRW\)](#), also known as "SRU Web Services"

Both these specifications support searching a remote catalogue and retrieving search results. They use the same query language, Common Query Language (CQL) and the similar XML formats for the results of an "explain" and "query" operation.

3.1. SRU

Search and Retrieve URL (SRU) is a REST-ful interface. This means it can be called with a simple HTTP (GET or POST) request, and returns results in plain XML. The entry point for the SRU service is:

- `http://<intraLibrary-root>/IntraLibrary-SRU`

3.2. SRW

The entry point for the SRW service is:

- `http://<intraLibrary-root>/services/SRW`

The SOAP binding has been implemented as follows, based on guidance from the Library of Congress team and the [standard WSDL for SRW](#):

- Service Style: document/literal
- Message Style: inline with no multi-refs
- SOAP version: 1.1

3.3. Queries

Queries in SRU and SRW are defined in [Common Query Language \(CQL\)](#)". It is very straightforward to create simple queries in CQL, but it is also possible to create complex queries, with multiple constraints.

IntraLibrary supports "Level 1" of CQL. To enable searches to be constrained by specific metadata fields, the [Dublin Core context set](#) is supported. There is currently no standard context set for IEEE LOM metadata.

Some simple queries:

- `world`
- `dc.title=metadata`
- `dc.creator="john smith"`
- `dc.keyword=snow`

IntraLibrary supports an additional context set, "collections", which enables searches to be constrained by collection. The index *collection.name* can be used as part of query to

specify a particular collection. For example a query can:

- constrain a results set to objects in one collection only
 - dc.title = "cat" and collection.name = "e-Prints"
- return the entire contents of a collection
 - collection.name = "e-Prints"
- obtain results from more than one collection
 - dc.title = "cat" and (collection.name = "images" or collection.name = "learning objects")

3.4. Metadata Formats

It can return either DC (default) or LOM, depending on the value of "recordSchema" so you should have no problems. See the SRU explain for more details, <http://bagel.intrallect.com:8080/intralibrary/IntraLibrary-SRU?version=1.1&operation=explain>

3.5. Conformance

IntraLibrary complies with the [Base Profile Requirements for SRW](#). It conforms with "Level 1" of CQL.

IntraLibrary supports the DC context set, and returns metadata in Simple Dublin Core (default) and IEEE LOM formats.

4. File Transfer

Sometimes it is not practical to use the "upload" facility to put files and packages into intraLibrary. For example, a file/package may be too big to upload in a reasonable time over a restricted network collection, or there may be a large set of files that need to be transferred from an existing system. It is possible to provide other means for users to transfer files to the repository server, such as FTP, including Secure FTP (SFTP) and WebDav.

The "file import" action in an intraLibrary workflow allows users to import files from a specified folder on the server filesystem. The location of this folder is configurable by user group. Any FTP or WebDAV server can be used to give intraLibrary users controlled access to transfer files to the appropriate folder on the server. If you would like some more

information about this, please contact Intrallect.

It is possible to automate the deposit of files/packages into the repository using the [Repository Java API](#). A sample implementation is provided with the product.

5. IMS DRI

The implementation of the IMS DRI "spec" in intraLibrary is based on a specification developed by the (ECL) project. This interface is deprecated, but still maintained for backward compatibility.

6. Repository Java-API

IntraLibrary has a fully documented "repository" Java-API. This API enables Java classes running in the same application context (webapp) as intraLibrary to access aspects of the intraLibrary business layer.

The Repository Java-API can be used to enable external systems to:

- gather information about the status of a repository
- create and manage users
- trigger workflow events
- query the structure of a workflow and find learning objects within it
- search for objects

The following support information is provided with the product:

- complete set of JavaDocs
- some sample implementations, including full source code and installation instructions:
 - adding users to intraLibrary
 - uploading multiple files into intraLibrary
 - searching for learning objects in intraLibrary

7. Future Developments

Intrallect plan to implement the following interfaces in intraLibrary:

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- Harvesting from other repositories via OAI-PMH.
 - Searching other catalogues via SRU/SRW.
 - Remote deposit into an intraLibrary repository via the JISC Deposit API, when the specification is finalised.
 - Enable an intraLibrary repository to be searched via the FIRE interface.

Intrallect are considering the following interfaces for implementation in intraLibrary:

- Transfer content packages to/from intraLibrary using AICC's PENS specification
- Manage user accounts in intraLibrary using the IMS Enterprise specification
- Authorisation using Shibboleth
- Open URL

8. References

1. Open Archive Initiative - Protocol for Metadata Harvesting: <http://www.oai.org/>
2. IMS Digital Repositories Interoperability Specification: <http://www.imsproject.org/>
3. OAI REpository Explorer: <http://?????>