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OCLC Developer Network handbook

Guide to OCLC Web Services

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WorldShare Web services

Note: the OCLC WorldShare Management Services (WMS) include an array of APIs, listed here as a group. WMS offers libraries a shared approach to license management, circulation and acquisitions to streamline collection management workflows across all formats, and create new value through cooperative analytics and shared data and practices. There are 5 WorldShare Web services covered here:

1. **WMS Acquisitions API**
2. **WMS Circulation API**
3. **WMS Collection Management API**
4. **WMS Vendor Information Center API**
5. **WMS NCIP Service**

For all of these services a library must subscribe to the WorldShare Management Services in order to use it. The Query protocol is OpenSearch, record formats are XML and JSON (Atom). There are no usage limits per day, each service is updated daily and relies on WSKey2 for authentication purposes.

WMS Acquisitions API

What it is: A read-write Web service so library staff can create, update, delete and submit orders for materials they'd like to acquire. Provides developer-level access to order data.

What it does: Lets you create purchase orders as needed for your institution. Facilitates the ability to access and edit existing orders or update an individual order status, and submit purchase orders to fulfillment vendors.

What you get:

- Information about orders, including:
  – Order data: Vendor, account numbers, internal and external identifiers, and comments
  – Order item data: WorldCat resource, price, discount, shipping/service charges, tax, and notes
  – Copy-level data: Branch/shelving location of items, fund information
- Ability to edit Order and order item data

Base Service URL: https://acq.sd00.worldcat.org

Documentation: http://www.oclc.org/developer/services/wms-acquisitions-api

Why you love it: Combine with external fulfillment vendor data, such as from Amazon, Alibris, YBP and others, and save some serious time, steps and screens for acquisitions workflows.

WMS Circulation API

What it is: A read-only Web service so library staff can generate a pull list for materials.

What it does: Shows you which materials used need to be pulled for patron requests, holds, and digitization.

What you get: Lists of materials to be pulled at a particular branch and the basic metadata to be able to retrieve the materials: title, material format, number of pieces, location and call number

Base Service URL: https://circ.sd00.worldcat.org/pulllist/

Documentation: http://www.oclc.org/developer/services/wms-circulation-api

Why you love it: Because the current service represents only a small fraction of what's coming with the Circulation service, including the ability to search for individual items.

WMS Collection Management API

What it is: Developer-level access to WorldCat Local Holding records, with the ability to retrieve, create, update, and delete this information.

What it does: This services allows libraries to access and change local copy information stored in WorldCat Local Holdings records, such as local call number and item location. Note: this functionality is ONLY available to libraries using WorldShare Management Services. The service helps the discovery view for end-users by providing them additional information about the material, and gives them more ways to search for specific, known items.

What you get:

- Retrieve Local Holdings Records in XML format
- Create new Local Holdings Records
- Update existing Local Holdings Records
- Delete existing Local Holdings records

Base Service URL: https://circ.sd00.worldcat.org/LHR

Documentation: http://www.oclc.org/developer/services/wms-collection-management-api

Why you love it: Add your local collection information, such as call numbers, location, notes and more.

WMS Vendor Information Center API

What it is: Developer-level access to information about who your library works with—the vendors you rely on for materials, products, content and services.

What it does: This service lets you see and search for vendor information. Query options include location, status (active or inactive) and the ability recall by the first letter of the company name.

What you get:

Information about your library's vendors and your relationship, including:

- General information: Name, language, currency, roles, etc.
- Addresses and contacts: E-mail address, IM, names, titles, roles, etc.
- Account numbers and notification settings
- Notes

Base Service URL: https://vic.sd00.worldcat.org/vendors

Documentation: http://www.oclc.org/developer/services/wms-vendor-information-center-api

Why you love it: Finally, a place where you can see a comprehensive list of all the companies your library works with, with names, locations, contact information, account settings and more.

WMS NCIP service

What it is: Provides a way to handle common library user-facing functions based on the industry standard NCIP functionality (NISO Circulation Interchange Protocol, also known as Z39.83).

What it does: lets you check library materials in or out, place requests for materials or cancel existing requests

What you get: the ability to manipulate library material status:

- Check out library materials
- Check in library materials
- Create requests for materials
- Cancel existing requests for materials

Base Service URL: https://circ.sd00.worldcat.org/ncip

Documentation: http://www.oclc.org/developer/services/wms-ncip-service

Why you love it: A standards-based way to give power to the patron.

WorldCat Basic API

What it is: Developer-level access to WorldCat—for limited data.

What it does: Search WorldCat and receive results for items in libraries. (WorldCat Basic API is a scaled-down version of the WorldCat Search API.)

What you get:

- Information about books, videos, music and more in WorldCat
- Information about authors, titles, ISBNs and OCLC numbers
- Records in standard bibliographic citation formats (APA, Chicago, Harvard, MLA, and Turabian)
- A link back to WorldCat.org for geographically-sorted library information

Who can use it: Anyone and everyone for noncommercial use. The WorldCat Basic API requires a unique Key—your own personal "wskey"

Usage limits: 1,000 queries/day

Query Protocols: OpenSearch

Record Formats: Atom and RSS

Where to access: http://www.worldcat.org/wcpa/content/affiliate/

Documentation: http://www.oclc.org/developer/services/WCBasic

Why you love it: it's open to all. Anyone can build an app or mash-up that encourages library discovery and use.

How to use the WorldCat Basic API

Access

WorldCat Basic API requests require an access key, provided by OCLC automatically through the Service Configuration module. Include your assigned "wskey" parameter in each request to the API, as shown in the example links.

Getting A Search Result

The form of an OpenSearch request is likely to be something like:

```
http://www.worldcat.org/webservices/catalog/search/opensearch?q=[search terms]&wskey=[your key]
```

The complete pattern for an OpenSearch request would be:

```
http://worldcat.org/webservices/catalog/search/opensearch?q=[query]&format=[atom|rss]&start=[start position]&count=[maximum number of records to return]&cformat=[citation format]&wskey=[your key]
```

Only the query value "q" would be required. Queries are sent as strings of keywords. All other values are optional. The default values expected are: format=atom, start=1, count=10. The search result presented will be limited to the first 100 records of that result.

Some examples

- A search for civil war, returning a result with the default Atom format, starting position, and count: http://www.worldcat.org/webservices/catalog/search/opensearch?q=civil%20war&wskey=[key]
- A search for civil war, returning a result in the RSS format, starting at position 6, with a count of 5 records: http://www.worldcat.org/webservices/catalog/search/opensearch?q=civil%20war&format=rss&start=6&count=5&wskey=[key]
- A search for civil war, returning a result in the Atom format, including an MLA-formatted citation for each record: http://www.worldcat.org/webservices/catalog/search/opensearch?q=civil%20war&format=atom&cformat=mla&wskey=[key]

Sample responses

See a Sample RSS response at http://www.oclc.org/developer/documentation/worldcat-basic-api/rss-xml-sample

See a Sample Atom response at http://www.oclc.org/developer/documentation/worldcat-basic-api/atom-sample

Requesting Formatted Citations

The API provides a way to obtain bibliographic citations, formatted in HTML for display in a Web browser. The supported bibliographic citation formats are APA, Chicago, Harvard, MLA, and Turabian.

The formatted citation result will be returned as a string of plain text, however it includes HTML formatting, so could be inserted directly into an HTML application. For example:

```
<p class="citation_style_TURABIAN">McPherson, James M. <i>Battle Cry of Freedom: The Civil War Era</i>. New York: Oxford University Press, 1988. </p>
```

results in a formatted citation such as:

McPherson, James M. Battle Cry of Freedom: The Civil War Era. New York: Oxford University Press, 1988.

If 'all' is specified as the cformat, all available citation formats will be returned in a single string.

Interpreting OpenSearch Responses

OpenSearch responses include title, the first author, a link, ISBN, and the OCLC number, whether the responses are in RSS or Atom format. For example, an Atom-formatted response:

```
<title>OCLC Worldcat Search: civil war</title>

<link href="http://worldcat.org/webservices/catalog/search/worldcat/opensearch?q=civil+war&start=1&count=5&format=atom"/>

<subtitle>Search results for civil war at http://worldcat.org/webservices/catalog</subtitle>
```

The title offers a human-readable string that could be used to present a label for the search result, the link field contains a URL that represents the current search in the web service, and the subtitle gives a brief annotation for the search.

In addition, responses include some OpenSearch response elements that are used to extend the RSS and Atom syndication formats. The additional metadata can be helpful for result set context and navigation, including the result size, starting position, number of items, and the search terms. For example:

```
<opensearch:totalResults>322066</opensearch:totalResults>
<opensearch:startIndex>1</opensearch:startIndex>
<opensearch:itemsPerPage>5</opensearch:itemsPerPage>
<opensearch:Query role="request" searchTerms="civil war" startPage="1"/>
```

Other response elements differ, depending on the requested format.

For Atom responses, these elements are especially useful:

The link elements with rel attributes of alternate, self, first, next and last include pre-built URLs for navigation through the search result.

See WorldCat API examples in action:

http://www.oclc.org/developer/applications/41/by_service

WorldCat Search API

What it is:

Developer-level access to WorldCat—for bibliographic holdings and location data.

What it does:

Search WorldCat and retrieve bibliographic records for cataloged items, information about libraries that own the items and links to online catalog records when available.

What you get:

- Information about books, videos, music and more in WorldCat
- MARC XML content for a single OCLC record
- Geographically-sorted Library information (institution name, location, and an OPAC link) in requests for single records
- Records in standard bibliographic citation formats (APA, Chicago, Harvard, MLA, and Turabian)

Who can use it: Qualifying institutions. Your organization must contribute to WorldCat and maintain a subscription to WorldCat on FirstSearch (or subscribe to WorldCat.org, for non-US).

Once qualified, you will be assigned a unique Key for you/your organization—a "wskey"

Usage limits: None

Query Protocols: SRU, OpenSearch

Record Formats: MARC XML (SRU), Dublin Core (SRU), Atom (OpenSearch), and RSS (OpenSearch). JSON option for lists of nearby libraries (holdings).

Where to apply for access: http://www.worldcat.org/wcpa/content/affiliate/

Documentation: http://www.oclc.org/developer/services/WCAPI

Why you love it: Enhance your local catalog with related items to show nearby holding libraries. Build apps that lead users back to their local library.

How to use the WorldCat Search API

Access

WorldCat Search API requests require an access key, provided by OCLC. Include your assigned "wskey" parameter in each request to the API, as shown in the example links.

Getting A Search Result

Using OpenSearch

The simplest form of an OpenSearch request is:
http://www.worldcat.org/webservices/catalog/search/opensearch?q=[search terms]&wskey=[your key]

The complete pattern for an OpenSearch request is:
http://worldcat.org/webservices/catalog/search/opensearch?q=[query]&format=[atom|rss]&start=[start position]&count=[maximum number of records to return]&cformat=[citation format]&wskey=[your key]

Using SRU

The simplest form of an SRU request is:
http://www.worldcat.org/webservices/catalog/search/sru?query=[search terms]&wskey=[key]

Retrieving a Single Record:

To retrieve a single record in MARC XML format, use a "content" request and an OCLC number or ISBN rather than a search. Content requests are sent with this URL pattern:

http://www.worldcat.org/webservices/catalog/content/[oclc number]?wskey=[key]

http://www.worldcat.org/webservices/catalog/content/isbn/[isbn]?wskey=[key]

Requesting Formatted Citations:

The simplest formulation of a citation request includes just the OCLC identifier, and an MLA citation is returned:

http://www.worldcat.org/webservices/catalog/content/citations/15550774?wskey=[key]

To specify a citation format, include a cformat parameter with one of these valid values: apa, chicago, harvard, mla, turabian, or all

http://www.worldcat.org/webservices/catalog/content/citations/15550774?cformat=turabian&wskey=[key]

Specifying Service Levels:

The Service Levels available to a system that uses the Search API are controlled, in part, by a parameter added to each API Request.

The parameter name is servicelevel and it currently accepts two values, default and full.

If the parameter is not supplied in a request, the API system will apply the default service level.

Consult the Service Levels documentation to determine the differences in available indexes and displays between the two levels.

A request for a single record at the full service level:

http://www.worldcat.org/webservices/catalog/content/8114241?servicelevel=full&wskey=[key]

"Hello World" Example

The only dependencies for trying out this example are a host that supports PHP, a web server, and the Magpie RSS Parser available at http://magpierss.sourceforge.net/. Call the script with a "q" parameter that has your search terms, e.g., http://[host]/[script.php]?q=[search terms].

```
<?php
require_once 'rss_fetch.inc';
$wskey = "[your web service key goes here]";
$cformat = "mla";
$q = urlencode(htmlentities($_GET['q']));
$url = "http://www.worldcat.org/webservices/catalog/
search/worldcat/ensearch?q=".$q."&format=rss&wskey=".$w
skey."&cformat=".$cformat;
$rss = fetch_rss($url);
foreach ($rss->items as $item ) {
       echo $item[content][encoded];
}
?>
```

See WorldCat Search API examples in action:

http://www.oclc.org/developer/applications/8/by_service

WorldCat knowledge base API

What it is: A read-only service for e-resource discovery and linking. Provides developer-level access to a library's information in the WorldCat knowledge base. The WorldCat knowledge base combines data about your library's econtent with access to it through linking features.

What it does:

Tells you what electronic journals or ebooks your library has, and how to link to them.

What you get:

OpenURL requests provide

- Matches for article, journal, or ebook citations to the specific access points for that content available to an individual library
- Links with all appropriate account identifiers
- Any proxy information necessary to get an end user to full text content

REST request types provide

- An entry point to browse a library's subscription resources
- Browse and search features similar to an A to Z list

Who can use it: Qualifying institutions who maintain an OCLC cataloging subscription

Usage limits/day: None

Query Protocols: OpenURL, REST

Record Formats: XML, JSON

Frequency of Update: daily

Documentation: http://www.oclc.org/developer/services/worldcat-knowledge-base-api

Why you love it: Provide access to the content you subscribe to, in one click.

How to use the WorldCat knowledge base API

Access

WorldCat Search API requests require an access key, provided by OCLC. Include your assigned "wskey" parameter in each request to the API. To obtain a wskey, contact support@oclc.org

Summary

The WorldCat knowledge base API answers the questions:

- Does library X have access to journal Y?
- How do I link to an article?

Response details
OpenURL:

Form queries to look like:

```
http://worldcat.org/webservices/kb/openurl/resolve?rft.title=Nature&wskey=...
```

Coverage fields:

The coverage and coverage_enum fields provide information on the time period covered by the journal.

The format for the coverage field is the following:

```
1       content@startDate~endDate
```

The format for the coverage_enum field is the following:

```
1       content@volume:N;issue:N~volume:N;issue:N
```

where N is the value for the parameter before it.

Both fields can be open-ended, which means one or both of the range pairs can be omitted from the results.

COVERAGE EXAMPLES	DESCRIPTION
fulltext@1987	Fulltext starts in 1987
fulltext@1987~	Fulltext starts in 1987
fulltext@~1987	Fulltext ends in 1987
fulltext@1990~1997	Starts in 1990 and ends in 1997
fulltext@	No start /end date
COVERAGE_ENUM EXAMPLES	**DESCRIPTION**
fulltext@volume:1;issue:1~volume:14;issue:4	Starts Vol. 1 Issue 1 and ends Vol. 14 Issue 4
fulltext@volume:57;issue:1~	Starts Vol. 57 Issue 1
abstracts	No start and end identifiers for abstracts

REST

Examples for each of the four base resources are provided in the online documentation, along with a sample XML vs. JSON response output for comparison.

- Collections
- Entries
- Providers
- Settings

WorldCat Registry APIs

What it is: Developer-level access to WorldCat Registry data—a global directory for libraries, consortia, archives and museum**What it is:** Developer-level access to QuestionPoint Knowledge Base Question-and-Answer (Q&A) pairs that QuestionPoint libraries saved for future re-use, for FAQ pages, for patron searches. The QuestionPoint Global Knowledge Base is a collection of Q&A pairs contributed by nearly 500 libraries worldwide. Local knowledge bases are built and maintained by single libraries or regional library groups and usually contain information more specific to that group.

What it does:

- Provides search access to QuestionPoint Q&A pairs and returns questions that match the query
- Accesses a specific Q&A record with question, answer, and metadata.

For example, the QuestionPoint Knowledge Base API could be used to retrieve a list of questions that have been asked on the topic of baseball. The API could then be used to return information about THE specific question "Which National League baseball teams have never won a World Series?

What you get:

- Question-and-Answer pairs and their accompanying metadata such as keywords, what library the question came from, the date the question was received, what library answered the question, and the date of the last update.

Who can use it: Anyone and everyone for noncommercial use.

Usage limits: No limit on requests

Query Protocols: REST

Record Formats: HTML, XML, Text, JSON

Where to start: **www.oclc.org/developer/services/questionpointkb**

Why you love it: Frequently Asked Questions, a list of questions or resources on a specific topic, or a list of recently asked questions at your libraryw.worldcat.org/registry/institutions/)

What it does:

- WorldCat Registry Search API: Retrieve basic information about multiple institutions and consortia, based on profiles in the WorldCat Registry.
- WorldCat Registry Detail API: Retrieve detailed information about a single institution or consortium, based on its profile in the WorldCat Registry.

For example, the Search API could retrieve a general list of public libraries in Orlando, Florida. The Detail API could then be invoked to return specific information about the Orlando Public Library, or one of its branches, based on data in its WorldCat Registry profile.

What you get:

- Information about libraries, consortia, archives and museums
- Definitions for institutional identities, services, relationships, contacts and other key data often shared with partners, vendors and other third parties
- Ability to use and find ientifiers such as WorldCat Registry ID, OCLC symbol, MARC Organization Code, SAN, NCES, Australian National Union Catalog, New Zealand Library Symbol, International Standard Identifier for Libraries (ISIL)

Who can use it: Anyone and everyone for noncommercial use. Contact registries@oclc.org to inquire about other usage.

Usage limits: No limits on requests, but the service can only return 20 results sets per request.

Query Protocols:
SRU CQL for WorldCat Registry Search API
REST for WorldCat Registry Detail API

Record Formats: HTML or XML

Where to download: http://www.worldcat.org/wcpa/content/affiliate/

Documentation: http://www.oclc.org/developer/services/worldcat-registry

Why you love it: Get information about thousands of libraries for details like name, address, IP ranges, global lending policies, OpenURL servers, consortial memberships and more.

How to use the WorldCat Registry APIs

Access

The records returned by the WorldCat Registry APIs are the same information normally displayed to an unauthenticated user who conducts a search on the WorldCat Registry Web site at www.worldcat.org/registry/institutions/

The two APIs are typically used as in a two-step process:

1. An application first uses the WorldCat Registry Search API to retrieve a set of "thin" records that match specified criteria. Each retrieved record includes the institution's name and its corresponding WorldCat Institution Identifier

2. The WorldCat Registry Detail API is then used to return an XML file with all available details for one of the listed institutions

Registry Search API

The WorldCat Registry Search API supports several configurable parameters which can be embedded in the command. The basic usage of the Web service is as follows:

```
<Web Service Base URL> "&query=" <Query> ["+or+"|"+and+"
<Query>]

Where:

<Web Service Base URL>
= the base URL of the WorldCat Registry Search Web service:
http://worldcat.org/webservices/registry/search/Institutions?

<Query>    =      <term> "%22" <value> "%22"
```

The Query supports any/all of the following terms, where each term represents a searchable field in the WorldCat Registry:

`local.oclcAccountName`	This is the account name at OCLC, which is not visible in the WorldCat Registry interface. This may or may not match the marketing name typically used to refer to the institution. This term is included in name searches for completeness.
`local.institutionName`	This is the Institution Name displayed in the WorldCat Registry interface.
`local.institutionAlias`	This is the Alias (an "also known as" name for the institution) displayed in the WorldCat Registry interface.
`local.libTypeUser`	This is the Institution Type displayed in the WorldCat Registry interface. See the Registry Search API page for numeric values for specific types of libraries.
`local.country`	This is the two-character Country Code, per ISO 3166.
`local.city`	This is the name of the City.
`local.state`	This is the name of the State/Province, per ISO 3166-2.
`local.postalCd`	This is the Postal Code.
`local.regID`	This is the WorldCat Registry ID, which is the unique and persistent numeric identifier assigned to an institution's profile in the WorldCat Registry.
`local.oclcSymbol`	This is the OCLC Symbol, an alphabetic and/or numeric identifier assigned to an institution that participates in the OCLC cooperative.
`local.marcOrgCode`	This is the alphabetic U.S. MARC Organizational Code
`local.rlgID`	This is the RLG ID, an alphabetic identifier assigned to an institution by the Research Libraries Group
`local.san`	This is the Standard Address Number (SAN)
`local.ncesId`	For U.S. libraries, this is the alphabetic and/or numeric National Center for Education Statistics (NCES) Identifier

WorldCat Registry Search API Usage Examples

This URL provides an example of the WorldCat Registry Search Web service searching for all public libraries in Columbus, Ohio:

```
http://worldcat.org/webservices/registry/search/
Institutions?version=
1.1&operation=searchRetrieve&recordSchema=
info%3Arfa%2FrfaRegistry%2FschemaInfos%2FadminData&maximumRecor
ds=
10&startRecord=1&resultSetTTL=300&recordPacking=xml&query=
local.city+%3D+%22columbus%22+and+local.
libTypeUser+exact+%223%22+and+
local.state+exact+%22US-OH%22&x-info-6-deletedRecord=
```

Syntax for Logically Deleted Records

A logically deleted record is designated in the XML record within the ‹institution› element by the presence of the logicalDelete="yes" attribute.

‹institution logicalDelete="yes"›

Registry Detail API

The basic SRU usage of the Registry Detail API is as follows:

```
<Web Service SRU Base URL> "/" <Institution identifier>
```

Where:

`<Web Service SRU Base URL>`	`= http://www.worldcat.org/webservices/registry/content/Institutions/`
`<Institution identifier>`	`= Alphanumeric institution identifier`

Syntax for lookup based on OCLC symbol is as follows:

```
<Web Service OCLC Lookup Base URL> "/" <OCLC Symbol>
"?serviceLabel=content"
```

OpenURL Gateway

What it is:

An OpenURL-resolving Web service that redirects Web-based applications to provide their end-users direct access to full-text articles and other online resources available from libraries. The OpenURL Gateway pulls OpenURL data from the WorldCat Registry—a global directory for libraries, consortia, archives and museums. (www.worldcat.org/registry/institutions/)

What it does:

Directs Web users to full text and other online resources at an appropriate library based on the user's IP address.

What you get:

- An improved user linking experience to article full text and other electronic resources
- Controlled access to authoritative OpenURL data maintained by libraries
- Seamless access to more than 1,000 registered OpenURL resolvers
- Link integration to OpenURL targets that are institution-independent

Who can use it:

Anyone and everyone for noncommercial use. Contact registries@oclc.org to inquire about other usage.

Usage limits: None

Query Protocols: N/A

Record Formats: N/A

Where to start: http://www.worldcat.org/wcpa/content/affiliate/

Get more: http://www.oclc.org/developer/services/openurlgateway

Why you love it:

You gain "Where Are You From?" resolver services via portable and institution-independent OpenURL links, which means users can discover authoritative library content closer to their point of need.

How to use the OpenURL Gateway, part of the WorldCat Registry

Implementation

Your Web site simply configures its OpenURL facility to utilize the OpenURL Gateway as its resolver. The Gateway recognizes the Internet IP address of an information seeker who has clicked an OpenURL link, and automatically redirects the user's request to the most appropriate institutional resolver registered in the WorldCat Registry (www.worldcat.org/registry/institutions/).

Streamlined access to full text

Your users enjoy a seamless linking experience from an information source—for instance, a search result with bibliographic data—to a related resource at their home library, such as full-text journals or abstracting, indexing, and citation databases. If they are searching from a recognized network access point, the user can be transparently authenticated and immediately presented the full text of the article. If the user's IP address cannot associated with an OpenURL resolver via the Gateway, the user is directed to the WorldCat.org detailed Web record for the sought resource.

OCLC participated in the creation of the OpenURL standard and serves as the designated maintenance agency for the standard.

Service Highlights

- Facilitates an improved linking experience to article full text and other electronic resources maintained by libraries
- Controlled access to authoritative OpenURL data maintained by libraries in the WorldCat Registry
- Seamless access to more than 1,000 registered OpenURL resolvers
- Developers can integrate links to OpenURL targets that are institution-independent

Resources

- Institutions inside and outside the OCLC cooperative create and manage service parameters for their OpenURL resolver(s) in the WorldCat Registry. Their WorldCat Registry profile can include details about their resolver vendor, base URL, authorized IP address ranges and other supporting information. The WorldCat Registry includes details for 1,300 institutional resolvers, including more than 80% of the Academic Research Libraries.
- Individuals unaffiliated with an institution can add the IP address and base URL of their preferred resolver to OCLC's OpenURL Resolver Registry at http://worldcatlibraries.org/registry
- Developers who wish to integrate the OpenURL Gateway into their service can review its XML schema and associated Web services at http://worldcatlibraries.org/registry/resolver/Resolver.xsd.

Implementations

Sites and services that utilize the OpenURL Gateway include:

- PrimeLit (http://primatelit.library.wisc.edu)
- RefWorks' "RefShare" feature (http://www.refworks.com/) Service subscription required to view
- ERIC (http://www.eric.ed.gov/)
- DIMDI German Institute of Medical Documentation and Information (http://www.dimdi.de/)
- Zotero research management plug-in (http://www.zotero.org/)
- LibX plug-in (http://www.libx.org/)
- OpenURL Referrer plug-in (http://www.nj.oclc.org/openurlref/)

See OpenURL Gateway/WorldCat Registry API examples in action:

http://www.oclc.org/developer/applications/49/by_service

WorldCat Identities

What it is:

A service that provides personal, corporate and subject-based identities (writers, authors, characters, corporations, horses, ships, etc.) based on information in WorldCat.

What it does:

Provides search access to identity information based on LCCN or a personal name.

What you get:

Browsable and searchable access to names in WorldCat.

Who can use it:

Anyone and everyone for noncommercial use.

Usage limits: None

Query Protocols: SRU, OpenURL and NameFinder

Results in: XML

Where to start:

http://www.oclc.org/developer/services/identities

Why you love it:

Find aggregated information for authors, writers, horses, ships and fictional characters.

How to use WorldCat Identities

There are four primary ways of linking to WorldCat Identities: Directly to the pages themselves, OpenURL, NameFinder searches and SRU searches.

Direct linking

By far the simplest. If you have an LCCN for a person, you can link using that:

- http://worldcat.org/identities/lccn-n79-6533 George Bernard Shaw
- http://worldcat.org/identities/lccn-sh87-7920 Secretariat (Race horse)

People that do not have an LCCN (but are in WorldCat) can be referenced directly, on the slim chance that spellings will match exactly:

- http://worldcat.org/identities/np-levan,+ralph+r

OpenURL linking

OpenURL links are used in WorldCat.org to link to pages about people:

http://worldcat.org/identities/find?url_ver=Z39.88-2004 &rft_val_fmt=info:ofi/fmt:kev:mtx:identity &rft. namelast={lastName}&rft_id=info:oclcnum/{oclcNumber}

NameFinder searches

The NameFinder service gives back a list of candidate names with URI's, ranking information, a sample title and other information about the name. REST-ful version:

- http://worldcat.org/identities/find?fullName=George+Bernard+Shaw
  NameFinder looks at lots of possible variations in names, so almost always results in a list rather than a unique Identity record.

SRU searches

There is also full SRU searching against the component databases that make up Identities. There are 5 SRU databases associated with Identities, listed below. The last database does a federated search across the other three. They can be found at:

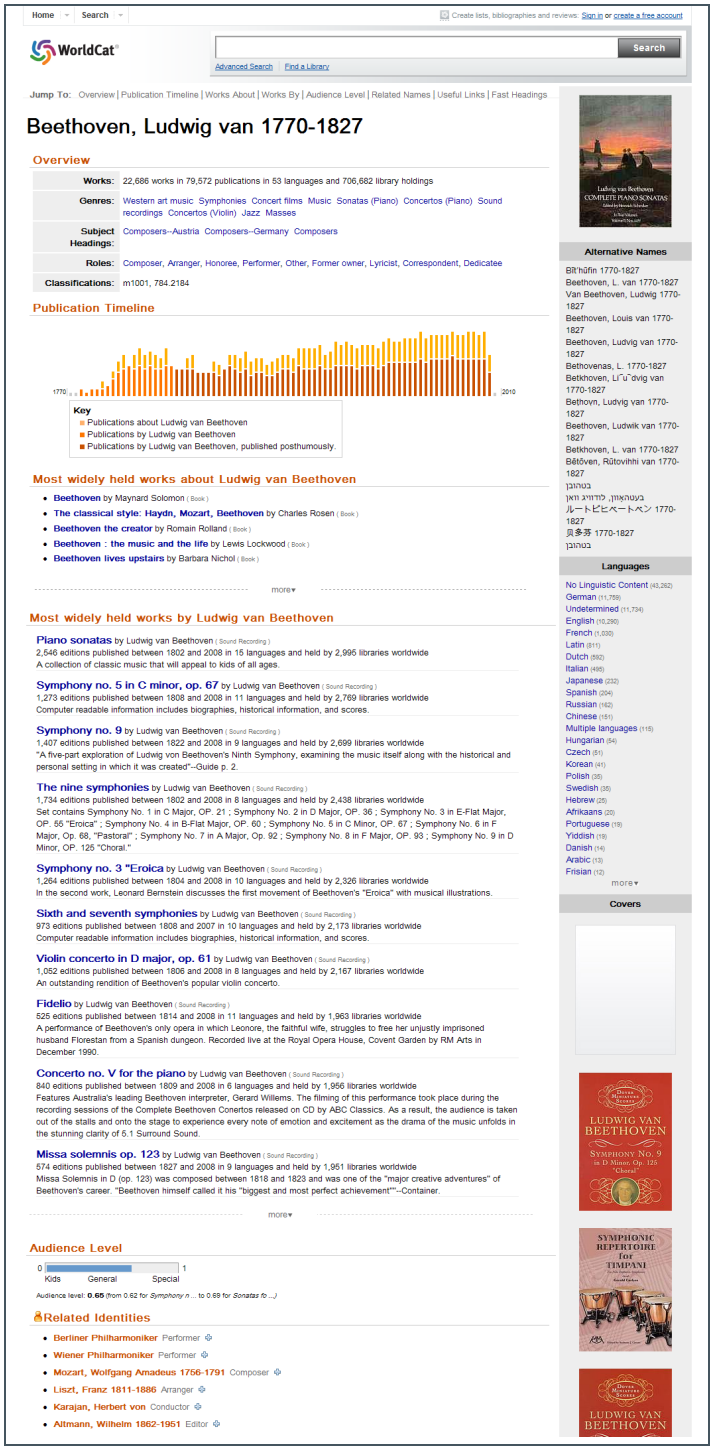
- http://worldcat.org/identities/search/CorporateIdentities
- http://worldcat.org/identities/search/PersonalIdentities
- http://worldcat.org/identities/search/SubjectIdentities
- http://worldcat.org/identities/search/Identities

The Explain record for each service lists the indexes that can be searched. A sortKey of “holdingscount” can be used to order the result sets by library holdings counts.

- The URI for Ralph LeVan (http://worldcat.org/identities/np-levan,+ralph+r) turns into an SRU search: http://worldcat.org/identities/search/Identities? query=local.pnkey+exact+”np-levan,+ralph+r”.
- All the URI’s return SRU searchRetrieveResponses (except for NameFinder which returns pages originally designed for the ePrints-UK project).

See WorldCat Identities in action:

http://www.oclc.org/developer/applications/42/by_service



Identifier Services (xID)

What it is: Machine-to-machine Web Services to take book and journal identifiers and relate them.

What it does: Gives you related identifier information about other editions, serials or FRBR groupings/work set data, based on existing standard identifiers.

- **xISBN:** Retrieve a list of International Standard Book Numbers (ISBNs) associated with a submitted ISBN, allowing end users to review other editions of that item.
- **xISSN:** Get information about serials, including predecessor and successor and alternate ISSNs and titles.
- **xOCLCnum:** Retrieve a list of related OCLC numbers and selected metadata associated with a submitted OCLC or LCCN. (Part of the xISBN service.)

What you get:

- The ability to identify a book from an online bookseller to determine if the book is available at your library.
- Confirm that no alternative versions of a work are available before your library sends an interlibrary loan request.
- Use a single search to check holdings of all editions of a work before making a selection for acquisition.
- Find alternate versions of serial publications

Who can use it: Anyone for noncommercial use. Contact xisbn-support@oclc.org to inquire about other usage.

Usage limits:

- xISBN: 1,000 requests/day free for noncommercial use.*
- xISSN: 1,000 requests/day free for noncommercial use.*

*Subscription access is available for higher requests. OCLC member libraries who maintain a current cataloging subscription have a 10,000 requests/day threshold.

Query Protocols: REST-based requests, OPenURL, unAPI protocols

Receive Formats: XML, XHTML, Python, JSON, or Ruby formats

Where to access:

- xISBN - http://www.oclc.org/developer/services/xisbn
- xISSN- http://www.oclc.org/developer/services/xissn
- xOCLCNum - http://www.oclc.org/developer/services/xoclcnum

Documentation: http://www.oclc.org/developer/documentation/xisbn/using-api

http://www.oclc.org/developer/documentation/xissn/using-api

Why you love it: Help end users find alternate versions of a source book or journal.

How to use xISBN

Access

You'll need a WorldCat Affiliate account in order to access both xISBN (including xOCLCNUM) and xISSN.

The xISBN Web service supplies ISBNs and other information associated with an individual intellectual work that is represented in WorldCat. Submit an ISBN to this service, and it returns a list of related ISBNs and selected metadata. The service is based on WorldCat, the world's largest network of library content and services. As of Nov 2009, the xISBN database covers more than 21 million ISBNs.

xISBN also supports other books-related identifiers mapping, such as xOCLCNUM.

How xISBN works

ISBNs are related to each other using librarian-catalogued bibliographic records in WorldCat with an algorithm developed by OCLC Research. The algorithm restructures WorldCat bibliographic records to conform to the FRBR conceptual model for information objects. For instance, rather than requiring an end user to traverse multiple records that represent many different manifestations of a book—including printings, hardback or paperback editions or even filmed versions—"FRBRized" WorldCat information allows that user to review a core record that lists all manifestations.

Using the xISBN Web service

To use the service, you submit a single, known ISBN value embedded in a URL to the xISBN server, and the server returns a list of associated ISBNs and relevant metadata. The ISBNs are sorted by the number of times each represented item is held by a WorldCat library, highest to lowest. Therefore, the first returned ISBN represents the most-held item in WorldCat among all associated items.

Subscription

Subscription-based use is available in three types:

1. Access by cumulative total
Enables a specific number of queries (e.g. 100,000 accesses) that have no time limits or expiration date.

2. Daily access limit
Allows a specific number of queries (e.g. 1,000 accesses) per day.

Applications using xISBN

- Koha
- LibX
- See more and a demo for xISBN at http://xisbn.worldcat.org/xisbndemo/

Developer Tools for xISBN

- Ruby Library
- Java Library
- Python Module
- See more at http://xisbn.worldcat.org/xisbnadmin/doc/tools.htm

How to use xISSN

Access

The xISSN Web service supplies ISSNs and other information associated with serial publications represented in WorldCat. Submit an ISSN to this service, and it returns a list of related ISSNs and selected metadata. The service is based on WorldCat, the world's largest network of library content and services. As of Nov 2009, the xISSN database covers more than 740,000 ISSNs.

Ideal for Web-enabled search applications such as library catalogs and OpenURL Resolvers, xISSN connects an end-user to information about alternate versions of serial publications.

How xISSN works

ISSNs are associated with each other using librarian-catalogued bibliographic records in WorldCat. ISSNs are related in two different ways:

- Different editions of same serial (such as print and online editions)
- Historical relationships (ISSN changes that result from title changes, mergers, splits, etc.)

Using the xISSN Web service

To use the service, you submit an ISSN embedded in a URL to the xISSN server, and the server returns a list of associated ISSNs and relevant metadata. ISSNs for different editions of the same serial are grouped together. An ISSN group may also have historical relationships with other groups.

Subscription

Subscription-based or commercial use for xISSN is available as a customized quotation.

Demonstration for xISSN

- Human-readable via the Title History tool: http://worldcat.org/xissn/titlehistory
- Machine-returned results: http://xissn.worldcat.org/xissndemo/

Implementations for xID

Sites and services that use xISBN and xISSN include:

- Search for Similar Titles (xISBN) http://katalog.ub.uni-heidelberg.de/
- WorldCat Python Module (xISBN, xISSN) http://matienzo.org/project/worldcat
- Peer Reviewed Journals and Writers for Henrik Ibsen (xISSN) http://depts.washington.edu/scand/isa/view_all_journals.php
- Serials Solutions E-Journal List/360 link (xISSN) http://www.librarywebchic.net/wordpress/2009/11/06/virtual-contribution-to-the-seattle-mashathon/

See xID examples in action:

xISBN http://www.oclc.org/developer/applications/38/by_service

xISSN http://www.oclc.org/developer/applications/39/by_service

QuestionPoint Knowledge Base API

What it is: Developer-level access to QuestionPoint Knowledge Base Question-and-Answer (Q&A)pairs that QuestionPoint libraries saved for future re-use, for FAQ pages, for patron searches. The QuestionPoint Global Knowledge Base is a collection of Q&A pairs contributed by nearly 500 libraries worldwide. Local knowledge bases are built and maintained by single libraries or regional library groups and usually contain information more specific to that group.

What it does:

- Provides search access to QuestionPoint Q&A pairs and returns questions that match the query
- Accesses a specific Q&A record with question, answer, and metadata.

For example, the QuestionPoint Knowledge Base API could be used to retrieve a list of questions that have been asked on the topic of baseball. The API could then be used to return information about THE specific question "Which National League baseball teams have never won a World Series?

What you get:

- Question-and-Answer pairs and their accompanying metadata such as keywords, what library the question came from, the date the question was received, what library answered the question, and the date of the last update.

Who can use it: Anyone and everyone for noncommercial use.

Usage limits: No limit on requests

Query Protocols: REST

Record Formats: HTML, XML, Text, JSON

Where to start: **www.oclc.org/developer/services/questionpointkb**

Why you love it: Frequently Asked Questions, a list of questions or resources on a specific topic, or a list of recently asked questions at your library

QuestionPoint®

How to use the QuestionPoint Knowledge Base API

The API can be used in two ways: searching for Q&A pairs, or linking to a specific Q&A pair.

The two APIs are typically used as in a two-step process:

1. An application first searches the QuestionPoint Knowledge Base for records that match specified criteria. Each retrieved record includes the question and its corresponding Question ID
2. An application can request the full data and metadata for a specific Q&A pair based on the Question ID

Searching for Q&A Pairs

```
http://questionpoint.org/crs/servlet/org.oclc.kb.KBSearchWS?&andk=[searchTerms]&preflang=[language]&kbids=[knowledgebaseID]&kbids=[knowledgebaseID]&type=[format]
```

Example

This URL provides an example of the QuestionPoint KB API searching for all questions that match the search term "baseball"

```
http://questionpoint.org/crs/servlet/org.oclc.kb.KBSearchWS?&andk=baseball&preflang=3&kbids=1&kbids=13&type=xml
```

This URL provides an example of the QuestionPoint KB API searching for recent (within the last week) questions that match the search terms "Scotland" and "language".

```
http://questionpoint.org/crs/servlet/org.oclc.kb.KBSearchWS?&sopt=kw&andk=scotland+language&dr=lw&preflang=4&kbids=1&type=xml
```

Linking to a Specific Q&A Pair

```
http://questionpoint.org/crs/servlet/org.oclc.ask.AskPatronFetchQAWS?qid=[questionID]&type=[format]
```

Example

```
http://questionpoint.org/crs/servlet/org.oclc.ask.AskPatronFetchQAWS?qid=44960&type=xml
```

Search Parameters

Parameter	Explanation
andk = term (use + between multiple words in a term)	All words must appear in the record.
phk = term.	Phrase. All words must appear exactly in the order typed.
ork = term.	Any of the words typed must appear in the record.
notk = term.	Must be used with 'andk' or 'ork'. Find records without this word(s). For example: ork=highland+scots&notk=cows This returns records with 'highland' or 'scots' in them but not one that contains 'cows'
preflang = language code for the search term	This determines the analyzer used. See Language codes: http://oclc.org/developer/documentation/questionpoint-knowledge-base/request-types
kbids = number of the KB to search	The Global KB is 1. Check with your QuestionPoint Administrator for local KB number.
dr = code for date range	Last Week (lw) Last Month (lm) Last Three Months (ltm) Last Six Months (lsm) Last Year (ly)
lang = language code of retrieved records	See Language codes: http://oclc.org/developer/documentation/questionpoint-knowledge-base/request-types
sopt = kw	Use this to search the Keyword field only. To limit to the keyword field use "sopt=kw" and "andk" Example: sopt=kw&andk=civil+war
qcat = category code	• 1 = FAQ • 2 = Bibliography/Pathfinder • 3 = Research (3) • 4 = Ready Reference (4) • 5 = Community Information (5)
topsubject = letter	Letter representing the highest level in the LC Class System
qinst = institution ID number	Limit results to questions **asked** at a particular institution
ainst = institution ID number	Limit results to questions **answered** at a particular institution
num = 10	Number of questions displayed per page; also 20, 30, 50, 100)

Terminology Services

Terminology Services is still an experimental research service with no service level assurances. OCLC seeks community feedback to gauge the community's level of interest in the Terminology Services before committing the resources to make it a production service. Note there IS a production OCLC Service called "OCLC Terminologies Service" which provides searching across 11 thesauri—some with licensing restrictions—that can be used with the Connexion cataloging service. Problems, questions or general interest should be directed to the OCLC Developer Network listserv WC-DEVNET-L, which is monitored by OCLC staff. See the back page of this handbook for more information about how to join the listserv.

What it is:

A suite of thesauri and controlled vocabularies provided by OCLC Research as an experimental research service with no service level assurances.

What it does:

Provides search access to a number of controlled vocabularies and thesauri. Coming soon: AutoSuggest access to Terminology Services!

What you get:

- Seven controlled vocabularies and thesauri (Terminologies)
- Concepts/headings in a controlled vocabulary
- Relationships for a concept/heading including equivalence, hierarchical, and associative

Who can use it:

Anyone and everyone for noncommercial use.

Usage limits: None

Query Protocols: SRU

Results in: HTML, MARC XML, SKOS, and Zthes

Where to start:

http://tspilot.oclc.org/resources/

Why you love it:

Access to many terminology databases to help with controlled vocabulary projects.

How to use the Terminology Services

Each of the Terminology databases is available as a SRU service. Add the short name of the database (in lower case) to the base Terminology URI and you'll get the Explain record for the database. E.g. http://tspilot.oclc.org/fast/?version=1.1&operation=explain

Controlled vocabularies include:

- **Faceted Application of Subject Terminology** (FAST)
- **Form and genre headings for fiction and drama** (GSAFD)
- **Thesaurus for graphic materials**—Genre terms (GMGPC)
- **Library of Congress Subject Headings** (LCSH)
- **Library of Congress AC Subject Headings** (LCSHAC)
- **Thesaurus for graphic materials**—Subject terms (LCTGM)
- **Medical Subject Headings** (MESH)
- **Book Industry Study Group Subject Headings** (BISAC)

Examples

1. Browse preferred term index for science fiction, results are retuned using server defaults

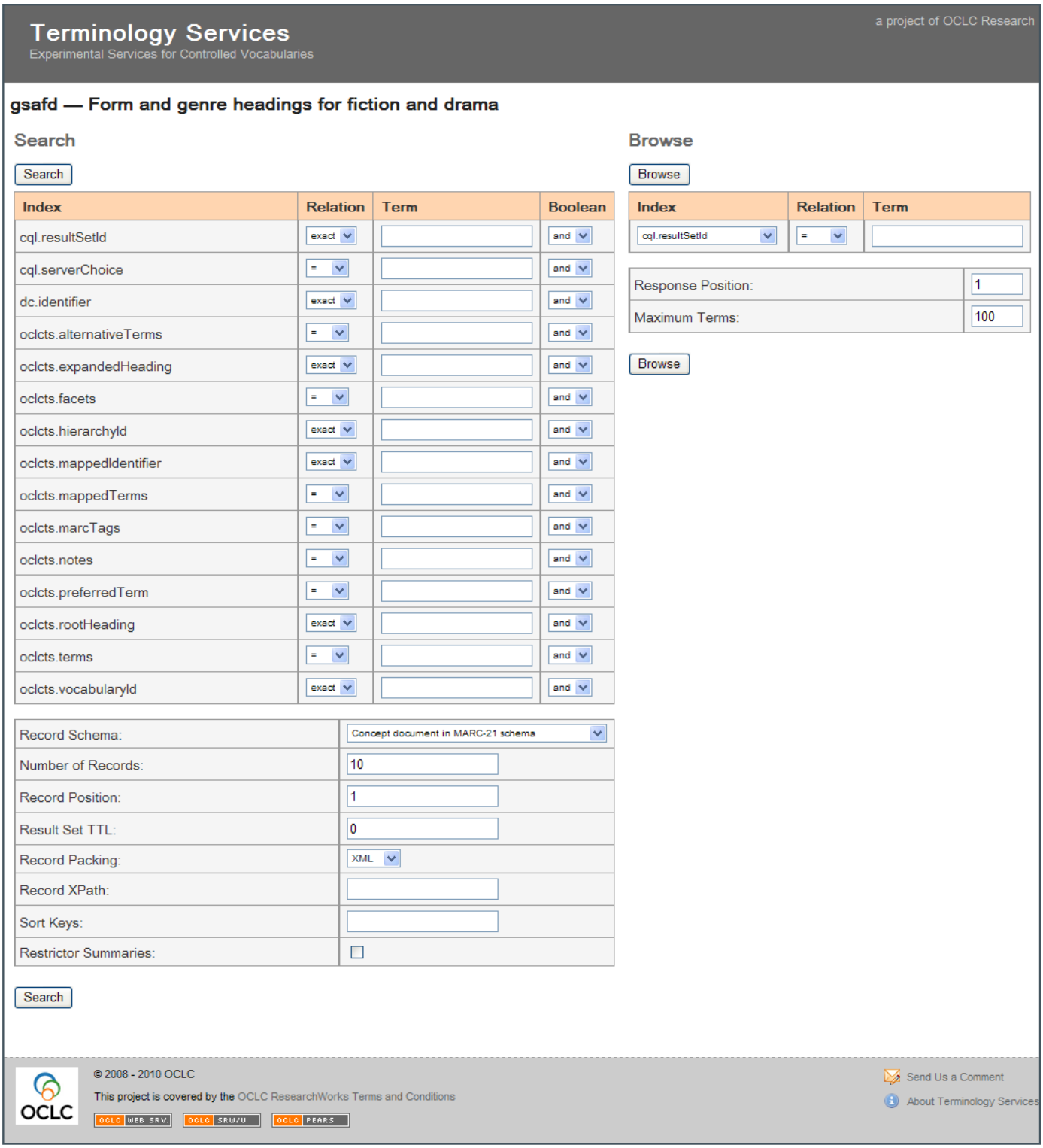
http://tspilot.oclc.org/gsafd/?query=oclcts.alternativeTerms+%3D+%22whodunits%22+or+oclcts.alternativeTerms+%3D+%22thrillers%22&operation=searchRetrieve&version=1.1

2. Search alternative terms for whodunits or thrillers results are retuned using server defaults

http://tspilot.oclc.org/gsafd/?query=oclcts.alternativeTerms+%3D+%22whodunits%22+or+oclcts.alternativeTerms+%3D+%22thrillers%22&operation=searchRetrieve&version=1.1

See Terminology Services examples in action:

http://www.oclc.org/developer/applications/44/by_service


Terminology Services
Experimental Services for Controlled Vocabularies
a project of OCLC Research
gsafd — Form and genre headings for fiction and drama
Search
Search
Index
Relation
Term
Boolean
cql.resultSetId
exact
and
cql.serverChoice
=
and
dc.identifier
exact
and
oclcts.alternativeTerms
=
and
oclcts.expandedHeading
exact
and
oclcts.facets
=
and
oclcts.hierarchyId
exact
and
oclcts.mappedIdentifier
exact
and
oclcts.mappedTerms
=
and
oclcts.marcTags
=
and
oclcts.notes
=
and
oclcts.preferredTerm
=
and
oclcts.rootHeading
exact
and
oclcts.terms
=
and
oclcts.vocabularyId
exact
and
Record Schema:
Concept document in MARC-21 schema
Number of Records:
10
Record Position:
1
Result Set TTL:
0
Record Packing:
XML
Record XPath:
Sort Keys:
Restrictor Summaries:
Search
Browse
Browse
Index
Relation
Term
cql.resultSetId
=
Response Position:
1
Maximum Terms:
100
Browse
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OCLC SRW/U
OCLC PEARS
Send Us a Comment
About Terminology Services

Experimental MapFAST Web Service

What it is: Developer-level access to FAST Subject headings based on geographic coordinates. The Faceted Application of Subject Terminology (FAST) schema reworks LCSH's authority rules so that they are easier to use, understand, and apply. The result is a schema designed to handle a large volume of materials with less effort and cost.

What it does:

- Provides search access to FAST Geographic and Event subject headings based on proximity of those headings to a given set of coordinates

For example, the MapFAST web service could be used to retrieve a list FAST subject headings near the coordinates: latitude longitude.

What you get:

- FAST Geographic and event subject headings near by the provided coordinates.
  Metadata about the heading includes name, coordinates and type of feature.

Who can use it: Anyone and everyone for noncommercial use.

Usage limits/day: No limit on requests.

Query Protocols: REST

Record Formats: JSON

Where to start: **www.oclc.org/developer/services/MapFAST**

Why you love it: Retrieve appropriate subject headings related to a particular place or region and use these to find related materials in WorldCat

How to use the Experimental MapFAST Web Service

The Web service can be used in to find FAST headings near a particular set of geographic coordinates.

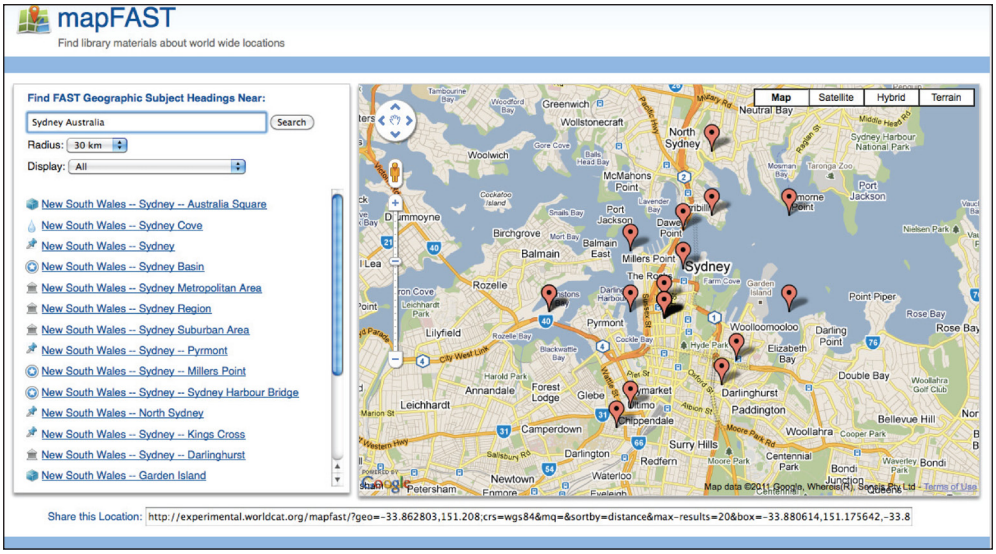
Finding headings near particular coordinates

http://experimental.worldcat.org/mapfast/services?geo=[latitude],[longitude];crs=wgs84&mq=&sortby=distance&max-results=[maximium_results]

Example

This URL provides an example of the MapFAST web service searching for all FAST headings near the coordinates for an address in Sydney Australia

```
http://experimental.worldcat.org/mapfast/services?geo=-33.863,151.208;crs=wgs84&mq=&sortby=distance&max-results=3
```



Search Parameters

Parameter	Explanation
geo	latitude,longitude; latitude -90 to +90, longitude -180 to +180; decimal format.
radius	Search radius in meters. allowed between 1000 and 200000m
crs	specifies the coordinate reference system. Currently only wgs84 is supported
sortby	Distance is the only possible value currently
max-results	Maximum number of results to show
mq	Limit by type of feature. Leave blank for all Possible codes: P=Populated Places A=Regions or Governmental Districts H=Lakes, Rivers, Streams E=Even T=Other U=Undefined
box	swlatitude,swlongitude,nelatitude,nelongitude,; alternate to geo & radius, constructs a latitude logitude box. Same format as geo=. The size is adjusted at search time to approximate the limits shown in radius.
callback	This makes the request JSONP, where a javascript function call is returned around the JSON data. Set parameter equal to function name

See OCLC Web Service examples in action:
www.oclc.org/developer/applications

Submit your own app to be included in the Application Gallery.
Simply e-mail a short description, along with a link and screen shot, to **devnet@oclc.org**.

Join the OCLC Developer Network
The OCLC Developer Network seeks to create a space where developers and librarians can connect. It is designed as a collaborative, two-way communication group where members directly influence what Web Services are created and enhanced by OCLC staff.

- Join the Developer Network by registering at **www.oclc.org/developer**
- Find and use OCLC Web Services through the WorldShare Platform
- Build and share applications and apps through the WorldShare App Gallery
- Read the Developer Network blog at **www.oclc.org/developer/news**
- Follow our tweet stream at **http://twitter.com/oclcdevnet**
- Membership is free and open to all.

OCLC WorldShare™

OCLC WorldShare provides a Web-based platform for collective innovation with shared services, integrated applications and a streamlined approach to managing library workflows. Together with WorldCat, WorldShare helps the world's libraries connect in new ways to operate, innovate and collaborate at Webscale.

WorldCat®

WorldCat is the world's largest database of bibliographic information built continuously by OCLC member libraries around the world since 1971. There are now more than 170 million records in WorldCat that span five millennia of recorded knowledge. Like the knowledge it describes, WorldCat grows steadily. Every second, OCLC and its member libraries add seven records to WorldCat. Developers especially can take advantage of multiple APIs into WorldCat to enrich and extend their local apps and services.

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