“Building a Code Library for WorldCat Discovery API”

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WorldCat Discovery API
Please Note: This API is still in development and is not yet available for general use. All related documentation is subject to change.

WorldCat Discovery API

Search and find all of the resources in WorldCat and our central index, from cataloged data to article information, expressed as part of the Web of data.

Status: in Development  Sandbox access: No

What You Get

The WorldCat Discovery API exposes your collection data for items in WorldCat, including:

- Materials held by your library and local/regional consortia
- The global "collective collection" of all libraries around the world
- E-resource data for hundreds of millions of articles, e-books, databases and digital items
Who can use the WorldCat Discovery API?

- Any FirstSearch library who has registered for WorldCat Discovery
- Limited beta for selected libraries right now.
- Request access on the OCLC Developer Network site.
Bibliographic Resource

The bibliographic resource provides access to the core data in the WorldCat Discovery API.

URLs and Supported Operations

<table>
<thead>
<tr>
<th>Operation</th>
<th>Resource URL</th>
<th>HTTP METHOD</th>
<th>Response Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Search</td>
<td><a href="https://beta.worldcat.org/discovery/bib/search?q=(query)">https://beta.worldcat.org/discovery/bib/search?q=(query)</a></td>
<td>GET</td>
<td>200</td>
</tr>
<tr>
<td>Read</td>
<td><a href="https://beta.worldcat.org/discovery/bib/data/%7BOCLC_Number%7D">https://beta.worldcat.org/discovery/bib/data/{OCLC_Number}</a></td>
<td>GET</td>
<td>200</td>
</tr>
</tbody>
</table>

HTTP Accept Types

The Discovery API supports the following mime types:

- application/rdf+xml
- text/plain
- text/turtle
https://beta.worldcat.org/discovery/bib/search?q=cats&dbIds=638&facetFields=genre:10
http://beta.worldcat.org/discovery/bib/data/56394544

<http://www.worldcat.org/oclc/56394544>
  a j.1:Thesis , schema:Book ;
  library:oclcnum 56394544 ;
  schema:about
  <http://experiment.worldcat.org/entity/work/data/17803456#Topic/indians_of_south_america_antiquities> ,
  <http://id.loc.gov/authorities/subjects/sh92005842> ,
  <http://id.worldcat.org/fast/969969> ,
  <http://experiment.worldcat.org/entity/work/data/17803456#Topic/tiwanaku_culture> ,
  <http://experiment.worldcat.org/entity/work/data/17803456#Place/andes_region> ,
  <http://id.loc.gov/authorities/subjects/sh2008104401> ,
  <http://id.worldcat.org/fast/1241744> ,
  <http://id.worldcat.org/fast/1151684> ;
  schema:creator
  <http://experiment.worldcat.org/entity/work/data/17803456#Person/calaway_michael_john> ;
  schema:datePublished "2001" ;
  schema:exampleOfWork <http://worldcat.org/entity/work/id/17803456> ;
  schema:inLanguage "en" ;
  schema:name "Environmental factors and prehistoric societal collapse: exploring the agro-ecological collapse of the Tiwanaku civilization and environmental time-scales" ;
  schema:url <http://www.worldcat.org/title/-/oclc/56394544> ;
  owl:sameAs <info:oclcnum/56394544> .
Offer Resource

The offer resource provides access to item-level institution holdings in the WorldCat Discovery API. Up to 100 holdings can be retrieved for an OCLC number using the offer resource.

This resource is described in the terms of Schema.org as opposed to the traditional concept of a library holding. The use of "offer" is consistent with OCLC's linked data strategy to describe library data in the language of the Web.

URLs and Supported Operations

<table>
<thead>
<tr>
<th>Operation</th>
<th>Resource URL</th>
<th>HTTP METHOD</th>
<th>Response Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Search</td>
<td><a href="https://beta.worldcat.org/discovery/offer/oclc/474685432?(parameters)">https://beta.worldcat.org/discovery/offer/oclc/474685432?(parameters)</a></td>
<td>GET</td>
<td>200</td>
</tr>
<tr>
<td>Read</td>
<td><a href="https://beta.worldcat.org/discovery/offer/oclc/%7BOCLC_Number%7D">https://beta.worldcat.org/discovery/offer/oclc/{OCLC_Number}</a></td>
<td>GET</td>
<td>200</td>
</tr>
</tbody>
</table>

HTTP Accept Types

The Discovery API supports the following mime types:
https://beta.worldcat.org/discovery/offer/oclc/56394544
Database Resource

The database resource is an administrative object that provides access to a list of the datasets a client is able to search. Access restrictions to the datasets are determined by the institutional affiliation available to the client, typically by associated API key. Some datasets may be restricted from access regardless of whether an institutional affiliation is in place. These restricted datasets are defined by an entity property requiresAuthentication of "true". This is explained in the Authorization Rules.

URLs and Supported Operations

<table>
<thead>
<tr>
<th>Operation</th>
<th>Resource URL</th>
<th>HTTP METHOD</th>
<th>Response Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>List</td>
<td><a href="https://beta.worldcat.org/discovery/database/list">https://beta.worldcat.org/discovery/database/list</a></td>
<td>GET</td>
<td>200</td>
</tr>
<tr>
<td>Read</td>
<td><a href="https://beta.worldcat.org/discovery/database/data/%7BDatabase_ID%7D">https://beta.worldcat.org/discovery/database/data/{Database_ID}</a></td>
<td>GET</td>
<td>200</td>
</tr>
</tbody>
</table>

HTTP Accept Types

The Discovery API supports the following mime types:

- application/rdf+xml

```json
{
    "@context": {
        "rdf": "http://www.w3.org/1999/02/22-rdf-syntax-ns#",
        "schema": "http://schema.org/",
        "discovery": "http://worldcat.org/vocab/discovery/"
    },
    "@graph": [
        {
            "@id": "_:b0",
            "@type": "http://worldcat.org/xmlschemas/response/ClientRequestError",
            "discovery:errorCode": {
                "@type": "http://www.w3.org/2001/XMLSchema#positiveInteger",
                "@value": "400"
            },
            "discovery:errorMessage": "Invalid value for facetFields parameter. A proper value for this field contains two components: 1) the facet name, and 2) the number of items to return from that facet. The allowed number values are 10, 25, 50, and 100. An example of such a field is facetFields=creator:10."
        }
    ]
}
```
How does Linked Data work?
The term **Linked Data** refers to a set of best practices for publishing and interlinking structured data on the Web.

[http://linkeddatabook.com/editions/1.0/#htoc8](http://linkeddatabook.com/editions/1.0/#htoc8)
Requirements

1. Identify Things
2. Make them Link-able
Thing.linkable? == GLOBAL # => true
Crafting identifiers

1
2
3
...

…
Crafting identifiers

oclc/1
oclc/2
oclc/3
...

...
Linked data: evolving the web into a global data space (eBook, 2011) [WorldCat.org]

Author: Tom Hart, David Christian Bier
Series: Synthesis digital library of engineering and computer science.; Synthesis lectures on the semantic web, theory and technology, #1.
Edition/Format: eBook; Document; English; 1st ed
Database: WorldCat

The World Wide Web has enabled the creation of a global information space comprising linked documents. As the Web becomes ever more enmeshed with our daily lives, there is a growing desire for direct access to raw data not currently available on the Web or bound up in hyperlexi documents. Linked Data provides a publishing paradigm in which not only documents, but also data, can be a first class citizen of the Web. Read more...

Rating: 0 with reviews - Be the first.
Subjects: Semantic Web, Web site development, COMPUTERS / Online Services / Resource Directories

oclc/704257552
id = Identifier.new('oclc/1')
id.globalize('worldcat.org')
# => worldcat.org/oclc/1
http://worldcat.org.oclc/1
The Good Lord Bird's author is James McBride.
What is the Resource Description Framework (RDF)?
RDF is a standard model for data interchange on the Web. RDF has features that facilitate data merging even if the underlying schemas differ, and it specifically supports the evolution of schemas over time without requiring all the data consumers to be changed.
"Homage to Mr. Wetmore" by Jen Waller
https://www.flickr.com/photos/jenwaller/6111032796
The Good Lord Bird's author is James McBride.
Familiar Version?

*The Good Lord Bird's* author is James McBride.

```
$book->setAuthor("James McBride");
```
Sample Triple:


Magnified

**SUBJECT:** <http://www.worldcat.org/oclc/820123671>

**Predicate:** <http://schema.org/author>

**Object:** <http://viaf.org/viaf/116053682>
**Thing > Property > author**

The author of this content. Please note that author is special in that HTML 5 provides a special mechanism for indicating authorship via the rel tag. That is equivalent to this and may be used interchangeably.

**Values expected to be one of these types**
- Organization
- Person

**Used on these types**
- CreativeWork
Graph (mathematics)

From Wikipedia, the free encyclopedia

This article is about sets of vertices connected by edges. For graphs of mathematical functions, see Graph of a function. For other uses, see Graph (disambiguation).

In mathematics, and more specifically in graph theory, a graph is a representation of a set of objects where some pairs of objects are connected by links. The interconnected objects are represented by mathematical abstractions called vertices, and the links that connect some pairs of vertices are called edges. Typically, a graph is depicted in diagramatic form as a set of dots for the vertices, joined by lines or curves for the edges. Graphs are one of the objects of study in discrete mathematics.

The edges may be directed or undirected. For example, if the vertices represent people at a party, and there is an edge between two people if they shake hands, then this is an undirected graph, because if person A shook hands with person B, then person B also shook hands with person A. In contrast, if there is an edge from person A to person B when person A knows of
"United States"

http://schema.org/name

http://id.worldcat.org/fast/1204155

http://schema.org/about

http://www.worldcat.org/oclc/820123671

http://schema.org/name

"The Good Lord Bird"

http://viaf.org/viaf/116053682

http://schema.org/name

"James McBride"
LOD Cloud Diagram as of September 2011
CC BY-SA 3.0 by Anja Jentzsch
http://viaf.org/viaf/116053682

http://schema.org/name

“James McBride”
How does it actually look?
“The Good Lord Bird”

http://www.worldcat.org/oclc/820123671

“United States”

http://www.worldcat.org/oclc/820123671

http://schema.org/name

http://schema.org/about

http://schema.org/author

http://id.worldcat.org/fast/1204155

http://schema.org/Place

http://viaf.org/viaf/116053682

“James McBride”

http://schema.org/Person

http://schema.org/name
<http://viaf.org/viaf/116053682> <http://www.w3.org/1999/02/22-rdf-syntax-ns#type> <http://schema.org/Person>
<http://id.worldcat.org/fast/1204155> <http://www.w3.org/1999/02/22-rdf-syntax-ns#type> <http://schema.org/Place>
The Good Lord Bird

McBride, James

United States
@prefix schema: <http://schema.org/> .

<http://www.worldcat.org/oclc/820123671> a schema:Book ;
    schema:about <http://id.worldcat.org/fast/1204155> ;
    schema:author <http://viaf.org/viaf/116053682> ;
    schema:name "The Good Lord Bird" .

<http://viaf.org/viaf/116053682> a schema:Person ;
    schema:name "McBride, James, 1957-" .

<http://id.worldcat.org/fast/1204155> a schema:Place ;
    schema:name "United States"
RDF/XML
Because someone wanted to read it with an XML parser

```xml
<?xml version="1.0" encoding="UTF-8"?>
<rdf:RDF
    xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
    xmlns:schema="http://schema.org/">

    <rdf:Description rdf:about="http://www.worldcat.org/oclc/820123671">
        <schema:author rdf:resource="http://viaf.org/viaf/116053682"/>
        <rdf:type rdf:resource="http://schema.org/Book"/>
        <schema:about rdf:resource="http://id.worldcat.org/fast/1204155"/>
        <schema:name>The Good Lord Bird</schema:name>
    </rdf:Description>

    <rdf:Description rdf:about="http://viaf.org/viaf/116053682">
        <rdf:type rdf:resource="http://schema.org/Person"/>
        <schema:name>McBride, James</schema:name>
    </rdf:Description>

    <rdf:Description rdf:about="http://id.worldcat.org/fast/1204155">
        <schema:name>United States</schema:name>
        <rdf:type rdf:resource="http://schema.org/Place"/>
    </rdf:Description>

</rdf:RDF>
```
JSON-LD
Bridging the gap between Linked Data and traditional API JSON

```json
{
    "@context": {
        "rdf": "http://www.w3.org/1999/02/22-rdf-syntax-ns#",
        "schema": "http://schema.org/"
    },
    "@id": "http://www.worldcat.org/oclc/820123671",
    "@type": "schema:Book",
    "schema:creator": {
        "@id": "http://viaf.org/viaf/116053682",
        "@type": "schema:Person",
        "schema:birthDate": "1957",
        "schema:familyName": "McBride",
        "schema:givenName": "James",
        "schema:name": "McBride, James, 1957-
    },
    "schema:name": "The Good Lord Bird"
}
```
The code library
OCLC PHP Auth Library — Edit

- 76 commits
- 1 branch
- 8 releases
- 2 contributors

branch: master

ocl-auth-php / +

Fixed AccessToken->getValue to allow an expired access token value to

librarywebchic authored 23 days ago
latest commit 7b5755179c

- docs
  Updated examples to force use of SSL Version 3 in Guzzle
  4 months ago

- src/OCLC
  Fixed AccessToken->getValue to allow an expired access token value to
  23 days ago

- tests
  Fixed AccessToken->getValue to allow an expired access token value to
  23 days ago

- .gitignore
  Added ability to get "signature" portion of the HMAC Authorization
  6 months ago

- LICENSE
  Update LICENSE
  8 months ago

- README.md
  Cleaned up HMAC Example formatting in README
  3 months ago

- composer.json
  Fixed AccessToken->getValue to allow an expired access token value to
  23 days ago

- phar.stub.php
  Added License information to these files
  8 months ago

- phpmunit.xml
  Moved phpmunit configuration to the top level and updated bootstrap
  a month ago

HTTPS clone URL
https://github.com/

You can clone with HTTPS, SSH, or Subversion.
Installation

The easiest way to install the OCLC Auth library is with Composer. Composer is a PHP dependency management tool that let's you declare the dependencies your project requires and installs them for you.

Sample Composer file

```json
{
   "name" : "MyApp",

   "repositories": [
   {
   "type": "git",
   "url": "https://github.com/OCLC-Developer-Network/worldcat-discovery-php.git"
   },
   {
   "type": "git",
   "url": "https://github.com/OCLC-Developer-Network/oclc-auth-php.git"
   }
   ],
   "require" : {
   "worldcat/discovery" : ">=0.7"
   }
}
```
Basic Example Reading a Bibliographic Record looks like this

```php
require_once('vendor/autoload.php');

use OCLC\Auth\WSKey;
use OCLC\Auth\AccessToken;
use WorldCat\Discovery\Bib;

$key = 'api-key';
$secret = 'api-key-secret';
$options = array('services' => array('WorldCatDiscoveryAPI', 'refresh_token'));
$wskey = new WSKey($key, $secret, $options);
$accessToken = $wskey->getAccessTokenWithClientCredentials('128807', '128807');

$bib = Bib::Find(7977212, $accessToken);

if (is_a($bib, 'WorldCat\Discovery\Error')) {
    echo $bib->getErrorCode();
    echo $bib->getErrorMessage();
} else {
    echo $bib->getName();
    print_r($bib->getID());
    echo $bib->getID();
    print_r($bib->type());
    echo $bib->type();
    print_r($bib->getAuthor());
    echo $bib->getAuthor()->getName();
    $contributors = array_map($bib->getContributors(), function($contributor){return print_r($contributors);});
```
A PHP library designed to make it easy to consume and produce RDF.

Designed for use in mixed teams of experienced and inexperienced RDF developers. Written in PSR-2 compliant PHP and tested extensively using PHPUnit.

```
1 EasyRdf_Namespace::set('schema', 'http://schema.org/');
2 $graph = new EasyRdf_Graph();
3 $graph->load('http://www.worldcat.org/oclc/62770242.rdf');
4 $bib = $graph->resource('http://www.worldcat.org/oclc/62770242');
5 echo 'Title: ' . $bib->get('schema:title');
6 $author = $bib->getResource('schema:creator');
7 echo 'Author: ' . $author->get('schema:givenName') . ' ';
8 echo $author->get('schema:familyName');
```

Feyrer, James

Contributors
• Sacerdote, Bruce

Publication Info

Format: Article
Language: English
Published: 2013-05-01
Title: American Economic Review Volume: 103 Issue: 3
Pages: 125 - 128
OCLC Number: 5131938809

Description

Abstract We examine the degree to which federal fiscal integration smoothes income and unemployment shocks across US States. We find that roughly 25 cents of every dollar of income shock at the state level is offset by federal fiscal policy. This stabilization comes entirely through the Federal tax system, not through spending stabilizers, automatic or otherwise. If we apply a comparable amount of cross country stabilization to European Union countries (as exists across US States), Greece and Spain would be receiving additional transfers of 2.5 percent of GDP.
Record HTTP interactions in your tests

...and replay them during future test runs for fast, deterministic and accurate tests.

```php
/**
 * @vcr bibSuccess
 */

function testGetBib(){
    $bib = Bib::find(7977212, $this->mockAccessToken);
    $this->assertInstanceOf('WorldCat\Discovery\Book', $bib);
    return $bib;
}

/**
 * @vcr bibWithAwards
 * Test for awards in the Bib - 41266045 **/

function testGetBibWithAward(){
    $bib = Bib::find(41266045, $this->mockAccessToken);
    $this->assertNotEmpty($bib->getAwards());
}
```
<table>
<thead>
<tr>
<th>Date Published</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010 577</td>
<td>1. <strong>Pride and prejudice</strong> 1990</td>
</tr>
<tr>
<td>2008 508</td>
<td>Austen, Jane, 1775-1817.</td>
</tr>
<tr>
<td>2009 506</td>
<td>Format: Book</td>
</tr>
<tr>
<td>2011 482</td>
<td>2. <strong>Pride and prejudice</strong> 1980</td>
</tr>
<tr>
<td>2006 446</td>
<td>Austen, Jane, 1775-1817.</td>
</tr>
<tr>
<td>2007 427</td>
<td>Format: AudioObject</td>
</tr>
<tr>
<td>2013 411</td>
<td>3. <strong>Pride and prejudice</strong> 1985</td>
</tr>
<tr>
<td>2006 394</td>
<td>Format: Movie</td>
</tr>
<tr>
<td>2012 387</td>
<td>4. <strong>Pride and prejudice</strong> 1999</td>
</tr>
<tr>
<td>0 309</td>
<td>Attwood, E. M. (Evelyn May), 1906-</td>
</tr>
<tr>
<td></td>
<td>Format: Book</td>
</tr>
<tr>
<td></td>
<td>5. <strong>Pride and prejudice</strong> 2012</td>
</tr>
<tr>
<td></td>
<td>Format: Bock</td>
</tr>
<tr>
<td></td>
<td>6. <strong>Pride and prejudice</strong> 2005</td>
</tr>
<tr>
<td></td>
<td>Format: DVD</td>
</tr>
<tr>
<td></td>
<td>7. <strong>Pride and prejudice (Television program : 1995)</strong> 1995</td>
</tr>
<tr>
<td></td>
<td>Format: Movie</td>
</tr>
<tr>
<td></td>
<td>8. <strong>Pride and prejudice (Television program : 1995)</strong> 1995</td>
</tr>
<tr>
<td></td>
<td>Format: Movie</td>
</tr>
<tr>
<td></td>
<td>9. <strong>Pride and prejudice</strong> 2000</td>
</tr>
<tr>
<td></td>
<td>West, Clare.</td>
</tr>
</tbody>
</table>

**About**
- Austen Jane 902
- 1775 1817 836
- Fiction 780
- England 777
- Pride And Prejudice 652
- 19th Century 595
- Electronic Books 549
- Social Life And Customs 441
- 1800 1899 378
- History 370

**In Language**
- English 5602
- Undetermined 365
- German 140
- No linguistic content 110
- Chinese 117
- Spanish 99
- French 58
- Italian 32
- Korean 29
Pride and prejudice
Austen, Jane, 1775-1817.

Contributors
- Kinsley, James.

Subjects
- England
- Young women
- Courtship
- Sisters

Publication Info
Format: Book
Language: English
Published: New York, Oxford : Oxford University Press 1990
Physical Details: 303 pages
ISBNs: 0191392330 0585377618
OCLC Number: 48569226

Genres
- Domestic fiction
- Fiction
- Electronic books
- Love stories

Availability
OCLC GOO PLAFORM SANDBOX INST

More Author Info
Influenced
- Shane Boles
- Mary Anne Evans
- Jenny Haddan
- Henry James
- Stephanie Meyer
- P. D. James
- Alice Munro
- James Phealan
- David Rambo
- Abigail Reynolds
- Patina Gappah
- Elizabeth Jane Howard
- John Cheever
- Ivy Alexandra
- Teri Holbrook
- Molly Harper
- Pamela Aidan
- Louisa Hall
- Susanna Clarke

Works
- Emma
- Pride and Prejudice
- Sense and Sensibility
- Northanger Abbey
- Persuasion
- Mansfield Park
- Lady Susan
Old Possum's book of practical cats


Contributors

- Rouben Mamoulian Collection (Library of Congress)

Subjects

- Cats

Publication Info

Format: Book
Language: English
Published: New York : Harcourt Brace Jovanovich 1982
ISBNs: 0151686564 015666588X
OCLC Number: 7977212

Description

Naming of cats -- Old Gumble cat -- Growltiger's last stand -- Rum Turn Tugger -- Song of the Jellicles -- Mungojerrie and Rumpelteazer -- Old Deuteronomy -- Pekes and the pollicies -- Mr. Mistoffelees -- Macavity: Mystery cat -- Gus: Theatre cat -- Bustopher Jones: Cat about town -- Skimbleshanks: Railway cat -- Ad-dressing of cats -- Cat Morgan introduces himself. These playful verses by a celebrated poet have delighted readers and cat lovers around the world ever since they were gathered for publication in 1939. As Valerie Eliot has pointed out, there are a number of references to cats in T.S. Eliot's work, but it was to his godchildren, particularly Tom Faber and Alison Tandy, in the 1930s, that he first revealed himself as "Old Possum" and for whom he composed his poems.

Genres

- Poetry

Availability

This item is not available at your library

More Author Info

Works

- The Hollow Men
- The Waste Land
- Prufrock and Other Observations
- The Love Song of J. Alfred Prufrock
- Four Quartets

Influenced

- Anthony Burgess
- Lawrence Durrell
- Ralph Waldo Ellison
- Seamus Heaney
- Mircea Cartarescu
- Dean Koontz
- Dylan Thomas
- Ted Hughes
- Elise Cowen
- Herbert Read
- Weldon Kees
- Conrad Potter Aiken
- Allen Tate
- Delmore Schwartz
- Eugenio Montale
- Jeanette Winterson
- Nick Laird
- Niko Grafenauer
- William Gaddie
- Donna Tartt
RESTful web services

Richardson, Leonard, 1979-

Contributors

- Ruby, Sam.

Subjects

- Web services

Publication Info

Format: Book
Language: English
Published: Sebastopol, Calif. : O'Reilly 2007
ISBNs: 0596529260 0596515219
OCLC Number: 154684429

Genres

- Electronic books
Thank you.

Further Reading
http://www.w3.org/2013/data/
http://linkeddatabook.com/editions/1.0/#htoc8