

**ExLibris**  
Part of **Clarivate**

**IGOLU**  
*International Group of Ex Libris Users*

# Linked-data APIs and more

**Ori Miller**  
Dev. Team Leader

# Agenda

- BIBFRAME APIs
- Cloud Apps
  - Widget
  - Beta Releases
  - OpenAI Cloud App
- Registering updates by API with to the API-key name
- XSL 3 in letters customization



# BIBFRAME APIs

<b>Content</b> text	Open Link in New Tab
	Open Link in New Window
<b>Authorized A</b> Heilbrun, Caro	Open Link in New Private Window
	Bookmark Link...
<b>Admin Metad</b>	
<b>Generation Pro</b>	Save Link As...
<b>Status:</b> correcte	Save Link to Pocket
<b>Encoding Level:</b>	Copy Link
<b>Description Cor</b>	Search Google for "RDF/XML (Compac..."
<b>Identified By:</b> b	
<b>Change Date:</b> 20	
<b>Creation Date:</b>	
<b>Non-rendered P</b>	
<b>Alternate For</b>	Switch Page Direction
- RDF/XML (Ver	Inspect Accessibility Properties
- N-Triples (Ver	Inspect (O)
- JSON (Verbos	
- RDF/XML (Compact)	
- N-Triples (Compact)	

On bottom in the "alternate formats" right click "RDF/XML (Compact)" and save the file as type ".rdf Resource Description Framework" Note that this will download the work.



Everything Search Loc.gov

The Library of Congress > Linked Data Service > BIBFRAME Works

**Bibframe Work**

**Title**  
The education of a woman : the life of Gloria Steinem

**Type**  
Text

**Contribution**  
Heilbrun, Carolyn G., 1926-2003 Contributor

**Subject**

- Steinem, Gloria
- Feminists--United States--Biography.
- Could not render: bflc:marcKey

Has Instance

New York : Dial Press, c1995.

Click here to get the Instance



On the top of the **work** file add:

```
<bib>  
<record_format>lcbf_**work</record_format>  
<record>
```

On the bottom of the **work** file add:

```
</record>  
</bib>
```

POST /almaws/v1/bibs

Response

Cache Detected - Elapsed Time: 5.57s

200

HEADERS <sup>ⓘ</sup> pretty ▾

X-Request-ID: o2rp7Ayba8

p3p: CP="IDC DSP COR ADM DEVI TAI1 PSA PSD IVA1 IVD1 CON1 HIS OUR IND CNT"

Date: Fri, 14 Jul 2023 15:32:36 GMT -1s

vary: accept-encoding

Content-Encoding: gzip

Content-Type: application/xml;charset=UTF-8

Transfer-Encoding: chunked

Keep-Alive: timeout=20

Connection: keep-alive

BODY <sup>ⓘ</sup> pretty ▾

```
<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>
<bib>
  <mms_id>97179111300121 </mms_id>
  <record_format>lc_bf_work </record_format>
  <linked_record_id/>
  <title>The education of a woman : the life of Gloria Steinem </title>
  <author>Heilbrun, Carolyn G., </author>
  <holdings link="/almaws/v1/bibs/97179111300121/holdings"/>
  <created_by>exl_impl </created_by>
  <created_date>2023-07-14Z </created_date>
```





# Cloud Apps

# Cloud Apps ~64

## Print address

Zahra Mousavi  
Alma | Cloud App

It gives the possibility to select one or more users or partners and print their addresses. The

## InnReach locations setup

Ori Miller  
Alma | Cloud App

Easy setup of Alma's libraries & locations into InnReach

## Switch PO-Line type

Liron Menda  
Alma | Cloud App

Change a PO Line from Physical to Electronic. It is done by creating a new PO Line, and

## Libris Holdings

Royal Institute of Technology - Sweden  
Alma | Cloud App

Cloud App which connects records in Alma to Libris Holdings. Libris is the Swedish

## Orbis Cascade Label Printer

Orbis Cascade Alliance  
Alma | Cloud App

This Cloud App developed by the Orbis Cascade Alliance generates individual spine labels to send to

## Bulk Scan-In

Liron Menda  
Alma | Cloud App

This app allows you to perform the scan in operation on file of barcodes. Supports configuring

## CSV User Loader

Josh Weisman  
Alma | Cloud App

Create, update, and delete Alma users from a list in a comma separated file. Supports flexible

## Address manager

Marie Vaňková  
Alma | Cloud App

An app to add/edit user addresses of type "alternative" in Alma. It displays the available

## Download BIB

omid soleimani  
Alma | Cloud App

The Download BIB app allows users to select a record in an Alma screen and download the

## Display user statistical category type

Technion Israel Institute of Technology  
Alma | Cloud App

Display users' statistical category types, for users in Alma screens such as Borrowing Requests and

## Last Copy

GIL Support  
Alma | Cloud App

This app can be used to identify whether a potential candidate for weeding is the last publicly-

## Appointment Scheduler

Josh Weisman  
Alma | Cloud App

Provides an interface to schedule appointments or events for Alma users. Features include: Define

## Invoice Line Tax Calculator

Josh Weisman  
Alma | Cloud App

This app allows you to configure tax rates per invoice line type. When you select invoices from a

## Interlibrary Add-on

Jørgen Jegesen  
Alma | Cloud App

This Cloud App is adding features to help handling Borrowing Request activities more

## Trove Search

Nishen Naidoo  
Alma | Cloud App

Search TroveSimilar to the Hathi Trust app, use metadata from bib records and resource sharing

## POL Post Correction

Metadata Hangzhou  
Alma | Cloud App

When viewing a Purchase Order Line with status SENT: modify the Currency, Vendor, and Fund

## Print Bib Records

Ori Miller  
Alma | Cloud App

Allows quickly printing records from the repository hit list. Provides an XSL-based printing

## Touchnet Payment Helper

Josh Weisman  
Alma | Cloud App

Integrates a "Pay with Touchnet" option when accessing a user with an open balance. For

## Delete Your Sets

George Heydon  
Alma | Cloud App

This app enhances the existing Manage Sets admin page in Alma, allowing users to bulk

## Call Number Assistant

Metadata Hangzhou  
Alma | Cloud App

Look up title sequence number via external API and enhance the call number field based on this

## SpineOMatic Cloud App

Mark Gobat  
Alma | Cloud App

Prints spine and other labels for items from Alma. Supports defining layouts, templates,

## Alma Refine

Josh Weisman  
Alma | Cloud App

Refine bibliographic records with services that adhere to the OpenRefine standard.

## Receive New Serial Items

Ori Miller  
Alma | Cloud App

Currently in BETA. Search for (or navigate to) a continuous PO line. Supports specifying the

## NACSIS Holdings for Alma

Shay Hadar  
Alma | Cloud App

This app provides an integration with the Japanese NACSIS catalog. Currently supports the





## Widget Cloud App Demo

Ori Miller  
Alma | Cloud App

Demo for a Cloud App which can be displayed as an Alma desktop widget. Please see the Cloud App



## Letters addressFrom Editor

Christopher Delis  
Alma | Cloud App

This cloud app allows you to view and edit the addressFrom label values of all your enabled Letters



## Journal Citation Reports (JCR)

Erez Shabo  
Alma | Cloud App

Alma customers can use the JCR app for two purposes: 1. Consent to share the institution's



## Sandbox Backup for Refresh

Harel Madmoni  
Alma | Cloud App

This app allows you to back up records before a sandbox refresh. Choose users from the list and



## RMST Pick List

Jamie Little  
Alma | Cloud App

The RMST Pick List is an Ex Libris Cloud App that allows users to print a pick list sorted by JHU's



## LSC Scanner



Jamie Little  
Alma | Cloud App


A Cloud App for scanning items at the JHU Library Service Center. This is a Cloud App for Alma that



# Cloud Apps

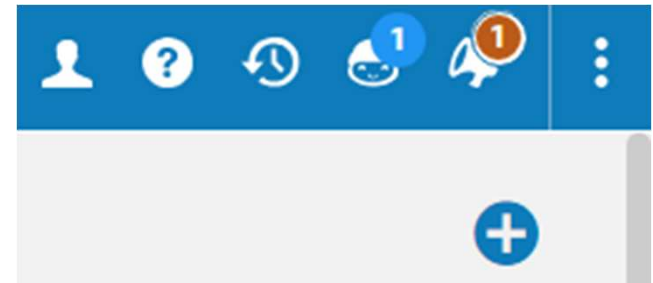
Widgets

← Back to App List  



**Number of users in each user-gr...**

This application is a widget and can only be loaded on the dashboard.



A mobile navigation bar with a blue header and a light gray body. The header contains five icons: a person icon, a question mark icon, a refresh icon, a chat bubble icon with a blue circle containing the number '1', and a notification bell icon with an orange circle containing the number '1'. To the right of these icons is a vertical ellipsis (three dots) icon. The body of the bar features a large blue plus sign icon in the bottom right corner.

## Manage Widgets



Active	Widget name	Description
<input type="checkbox"/>	Sandbox(es)	Link to the sandbox environment/s that are available for your use
<input checked="" type="checkbox"/>	Tasks	Tasks Widget
<input checked="" type="checkbox"/>	Notifications	Notifications Widget
<input checked="" type="checkbox"/>	Organization Calendar	Calendar Widget
<input type="checkbox"/>	Scheduled Jobs Status	The Scheduled Jobs Status Dashboard widget presents the status of scheduled jobs for the last 5 days
<input checked="" type="checkbox"/>	Discovery Search	Primo Dashboard Widget
<input type="checkbox"/>	Consortia Member Links	Consortia Links Widget
<input type="checkbox"/>	primo	primo
<input checked="" type="checkbox"/>	Number of users in each user-group	Demonstrating Cloud App as a widget

Welcome, Implementor, Ex Libris | 18/06/2023

- Recent Pages**
- [Find and Manage Users](#)  
Administration
- [Customer Parameters](#)  
Administration
- [Discovery Import Profil...](#)  
Discovery

### Discovery Search

Search anything...



### Notifications



2/15/2011

University of Knowledge Fall semester thesis approval deadline

### Number of users in each user-group

Group	Code	Amount
Alumni	ALUMNI	0
Undergraduate Student	STUDENT_UNDERGRADUATE	3489
Employee	EMPLOYEE	1
Visitor	GUEST	5
Graduate Student	STUDENT_GRADUATE	1930
Faculty	FACULTY	456
Staff	STAFF	10

### Tasks

- 1 DARA Re
- 2 Order Lin
- 2 Deposits
- 1 Files Clo
- 15 Research
- 561 Smart H

```

ngOnInit() {
  this.restService.call('/conf/code-tables/UserGroups').subscribe(res=>{
    res.row.forEach(row => {
      this.restService.call('/users?q=user_group~'+row.code+'&limit=1').subscribe(users=>{
        let group: string = row.description;
        let code: string = row.code;
        let amount: number = users.total_record_count;
        this.userGroups.push( { "group": group, "code": code, "amount": amount } );
      });
    });
  });
}

```

```

<table>
  <tr>
    <th>Group</th>
    <th>Code</th>
    <th>Amount</th>
  </tr>
  <tr *ngFor="let userGroup of userGroups">
    <td>{{ userGroup.group }}</td>
    <td>{{ userGroup.code }}</td>
    <td>{{ userGroup.amount }}</td>
  </tr>
</table>

```

```
{ } manifest.json > ...
1 {
2   "id": "widget-demo",
3   "title": "Number of users in each user-group",
4   "subtitle": "Demonstrating Cloud App as a widget",
5   "author": "Ori Miller",
6   "description": "Can be helpful for developers building similar apps",
7   "icon": {
8     "type": "url",
9     "value": "/assets/logo_widget_cloud_app.png"
10  },
11  "isWidget": true,
12  "widgetHeightPx": 200
13 }
```

Recent Pages   > Customer Parameters Administration   > Labels Discovery   > Configure Views Discovery

[DEV] Number of users in each user-group

Group	Code	Amount
Employee	EMPLOYEE	0
Graduate Student	STUDENT_GRADUATE	1923
Visitor	GUEST	7
Faculty	FACULTY	454
Undergraduate Student	STUDENT_UNDERGRADUATE	3489
Staff	STAFF	10

Tasks

Notifications

- 2/15/2011 University
- 2/28/2011 University



<https://developers.exlibrisgroup.com/cloudapps/tutorials/cloud-apps-as-widgets/>



# Cloud Apps

Beta release



## Updates as a Beta Version

If you would like to have some users review/test your update before replacing the previous version completely, you can tag your Release with a “-beta” suffix (e.g. v1.1-beta)

The webhook-initiate process will keep the existing version in place, and store the new beta version in parallel.

To access the beta version from the UI, end-users will need to open the app's details and click on “(Try v1.1-beta)”:

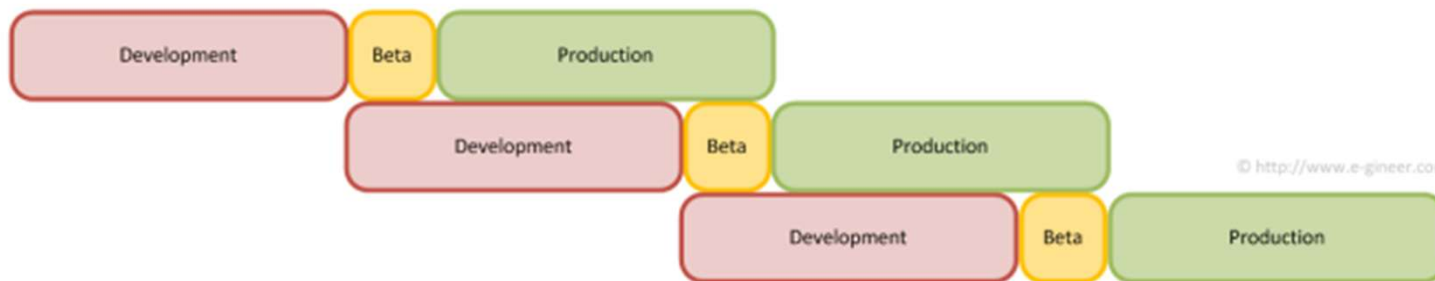
### More information

View the app on:  | [Ex Libris App Center](#)

Version: v1.0 | [\(Try v.1.1-beta\)](#) | [Help](#)

After the changes were reviewed/tested you can create a regular release (or another “-beta” release if additional changes are needed).

# Publishing a Cloud App: Beta → Release



## Why use “Beta” version

- In-house testing
- Agile dev.
- When localhost vs. prod URLs differences might cause issues



# Cloud Apps

Cloud App that calls OpenAI APIs



Proxy Server  
Adding CORS  
headers

**GET /users/X/loans?loan\_status=Complete**




Cloud App Center

Activated Apps Available Apps

Suggest

Select a user



CLEAR NEXT

Back Clear Recommend based on 10 records

- 14278
- 19041
- 20041
- 21041
- 22041
- Eckel
- Mahaj
- Penny
- Sinha,


Recommend based on selected

A total of 10 lo

- Check/
- The har
- Approac
- Global c
- concept
- Essenti
- Disquie
- The spir
- child, he
- cultures
- Dell Lat
- 60W Ad
- Dell Lat
- Dell Lat

Items per pag

Back to App List

 **OpenAI AI Recommendations**

The books recommended vary in their focus, but all are textbooks that cover epidemiology in public health. The following are ISBNs for some of the recommended books:

1. Basic Epidemiology, 4th edition, by Jack C. R. Green and Melvin K. Shapiro (ISBN: 0071541143)
2. Essentials of Epidemiology in Public Health, 3rd edition, by Douglas J. Brown, Jeffrey M. Karp, and Sharon L. Karp (ISBN: 0195113435)



## Configuration

API Key \*

.....

Prompt template: \*

For someone who enjoyed the books {LIST}, which books would you recommend? Please include ISBNs

Your Primo URL:

## OpenAI's API

```
curl https://api.openai.com/v1/completions \  
-H "Content-Type: application/json" \  
-H "Authorization: Bearer $OPENAI_API_KEY" \  
-d '{  
  "model": "text-davinci-003",  
  "prompt": "For someone who enjoyed the books My Sisters Keeper and The Fault in  
Our Stars which books would you recommend? Please include ISBNs",  
  "temperature": 0.7,  
  "max_tokens": 256,  
  "top_p": 1,  
  "frequency_penalty": 0,  
  "presence_penalty": 0  
'
```





## Calling OpenAI via the proxy

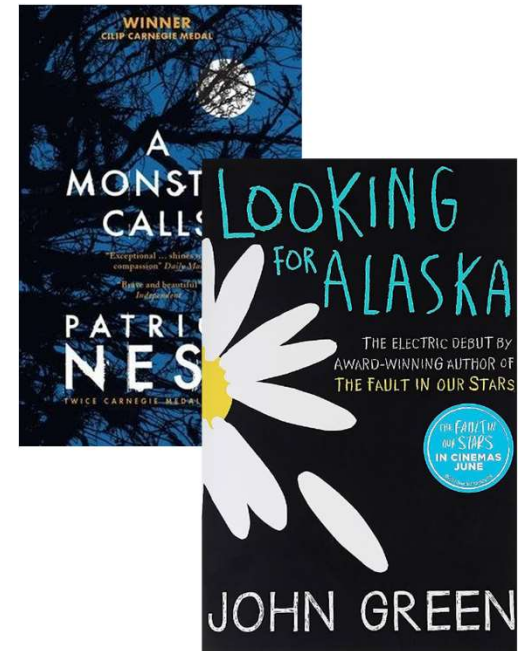
```
curl \
-H 'X-Proxy-Host: api.openai.com' \
-H "X-Proxy-Auth: Bearer $OPENAI_API_KEY" \
-H 'Authorization: Bearer
eyJhbGciOiJSUzI1NiIsImtpZCI6ImV4bGhlcC0wMSJ9.eyJpc3MiOiJodHRwczovL2FwcHMwMS5leHQwZXhsaWJyaXNncm91cC5jb20vYXV0aClmF1ZC
l6lkV4bENsb3VkQXBwOmp3ZWlzbWZuL2V4bC1lenByb3h5LWF1dGgtaG9zdGVkIiwic3ViIjoiaXhsX2ltcGwiLCJpbnN0X2NvZGUilwMUJDX0lOU1Qi
LCJleHAiOiJlMzUxMTM2NTR9.kq7-x5NS_25MjxA__poQf-
x7Gi6zV8fx0AKIjFkrF8_nHmhqPNV2oZGSoXDcuDUWolvW9oz8Ao13RcGwCXbar7JYt9fX2JHW69P__4w54Ylsf1qH49cALSziNRku8anGQFLqx-
BeXlwK3xKoOFpc6xt-nclSsCcp53-
z_YAbcUlb2UyRJ0_YWGBGwxBJRooD3dU3pEastHrduf272LpYGe9mKz8JxYSSmOdkao4iPzoK3ViQJbJH8wn_1HFp0J_J4mm1nn6zRg3uVXKPyUf_xL
DOThjzyiFdNzBSLH5dPitSoYya68LRSrUQh8TnwmQGEoaxkzePmF19wYGkSRow' \
-H "Content-Type: application/json" \
-d '{
  "model": "text-davinci-003",
  "prompt": "For someone who enjoyed the books My Sisters Keeper and The Fault in Our Stars which books would you recommend? Please include
ISBNs",
  "temperature": 0.7,
  "max_tokens": 256,
  "top_p": 1,
  "frequency_penalty": 0,
  "presence_penalty": 0
}' \
https://api.exlibnetwork.net/proxy/v1/completions
```

## API Output

```
{"id":"cml-6ePxFDNg3jhrHsh5FAhligcJe7LZF","object":"text_completion","created":1675090909,"model":"text-davinci-003","choices":[{"text":" if available.\n\n1. A Monster Calls: 9781406311525\n2. Looking for Alaska: 9780142402511\n3. Everything, Everything: 9780062422595\n4. The Perks of Being a Wallflower: 9780671027346\n5. If I Stay: 9780142414934\n6. The Book Thief: 9780375842207\n7. Thirteen Reasons Why: 9780451478290\n8. The Absolutely True Diary of a Part-Time Indian: 9780316013697\n9. The Outsiders: 9780446600355\n10. The Curious Incident of the Dog in the Night-Time: 9780385604545","index":0,"logprobs":null,"finish_reason":"stop"}],"usage":{"prompt_tokens":25,"completion_tokens":151,"total_tokens":176}}
```

## The API Output formatted

1. A Monster Calls: 9781406311525
2. Looking for Alaska: 9780142402511
3. Everything, Everything: 9780062422595
4. The Perks of Being a Wallflower: 9780671027346
5. If I Stay: 9780142414934
6. The Book Thief: 9780375842207
7. Thirteen Reasons Why: 9780451478290
8. The Absolutely True Diary of a Part-Time Indian: 9780316013697
9. The Outsiders: 9780446600355
10. The Curious Incident of the Dog in the Night-Time: 9780385604545





Registering updates by API according to  
the API-key name

## Add/Edit API Key

Name

Description

Enabled

Save detailed log files

Allowed IP Range

Restriction Profile code

### Permissions

Area	Env	Permissions	Action
<input type="text" value="Users"/>	<input type="text" value="Production"/>	<input type="radio"/> Read-only <input checked="" type="radio"/> Read/write	<input type="button" value="Delete"/>



Created by  
API, Ex Libris 

Created on  
29/05/2023 13:30:51 BST

Last updated by  
API, Ex Libris 

Last updated on  
29/05/2023 13:30:51 BST



Created by  
API, Library Mobile App

Created on  
30/05/2023 12:52:44 BST

Last updated by  
API, Library Mobile App

Last updated on  
30/05/2023 12:52:44 BST

Under “General Configuration” > “Other Settings”, change **detailed\_creator\_and\_modifier\_for\_api\_changes** to true:

	parameter key	parameter module	parameter value	free text description
1	campus	general		campus code
2	code_and_mapping_table_log	general	0	The retention period in
3	default_language	general	en	Do not change this par
4	detailed_creator_and_modifie	general	true	When true, add Api Key

<https://developers.exlibrisgroup.com/blog/registering-updates-by-api-according-to-the-api-key-name/>



# Using XSLT 3 with our new editor



XSL

Save Draft

Remove Draft

Restore



```

1 <xsl:stylesheet version="3.0"
2   xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
3
4 <xsl:include href="header.xsl" />
5 <xsl:include href="senderReceiver.xsl" />
6 <xsl:include href="mailReason.xsl" />
7 <xsl:include href="footer.xsl" />
8 <xsl:include href="style.xsl" />
9
10 <xsl:template match="/">
11   <html>
12     <head>
13       <xsl:call-template name="generalStyle" />
14     </head>
15     <body>
16       <xsl:value-of select="'hello' => upper-case()" />
17       <br/><br/>
18       <div class="messageArea">
19         <div class="messageBody">
20           <table role="presentation" cellspacing="0" cellpadding
21             Label with code letterName: @@letterName@@
22           </table>
23         </div>

```

Visual

HTML

Open in new tab

Language : English ▾ Width :516px

Preview

HELLO

Label with code letterName: Test Letter



XML

Download

Save

Restore



```

1 <notification_data>
2   <test_list_list>
3     <test_list><normalized_sum>2</normalized_sum></test_list>
4     <test_list><normalized_sum>3</normalized_sum></test_list>
5   </test_list_list>
6   <conversation_messages>
7     <last_message></last_message>
8     <message>
9       <author>
10        <addresses mask></addresses mask>

```

Send example by email my@email.com

Send

## Tricks with XSL V2/V3

```
<xsl:value-of  
select="'Hello World'=>upper-case()=>substring-after(' ')" />
```

Instead of:

```
<xsl:variable name="lowercase" select="'abcdefghijklmnopqrstuvwxyz'" />  
<xsl:variable name="uppercase" select="'ABCDEFGHIJKLMNOPQRSTUVWXYZ'" />  
<xsl:value-of select="substring-after(translate('Hello World', $lowercase, $uppercase),' ')" />
```

## Tricks with XSL V2/V3

```
<xsl:value-of select="'Hello' || 'World'" />
```

Instead of:

```
<xsl:value-of select="concat('Hello ', 'World')" />
```

## Tricks with XSL V2/V3

Or even better...

Instead of:

```
<xsl:value-of select="'Hello' || 'World'" />
```

Use:

```
<body xsl:expand-text="yes">
  {'Hello' || ' world'}
```

## A few more...

```
{('a','b','c')! upper-case(.)}
```

```
<xsl:variable name="testYear" select="//year" as="xs:integer" />  
{ $testYear - 1 }
```

```
<xsl:variable name="someNum" select="4" />  
<xsl:if test="$someNum=(3 to 7)">It is in the middle</xsl:if>
```

```
{ replace("Hello World", "^(.*) World", "$1 Friends") }
```

# Parsing XML inside XML

Specifically from the field `request_metadata` which is hard to parse, because it contains an XML (within XML):

```
723 <request_hash_key>1131389100175760371600-1914365486000212100490020220828075</request_hash_key>
724 <request_metadata>&lt;?xml version=&quot;1.0&quot; encoding=&quot;UTF-8&quot;?&gt;
725 &lt;dc:record xmlns:dc=&quot;http://purl.org/dc/elements/1.1/&quot; xmlns:dcterms=&quot;http://purl.org/dc/terms/&quot;
xmlns:xsi=&quot;http://www.w3.org/2001/XMLSchema-instance&quot; &gt;&lt;dc:title&gt;title28080749688&lt;/dc:title&gt;&lt;
dc:creator&gt;Author_28080749688&lt;/dc:creator&gt;&lt;dc:rlterms_edition&gt;1&lt;/dc:rlterms_edition&gt;&lt;
dc:identifier_isbn&gt;28080749688isbn&lt;/dc:identifier_isbn&gt;&lt;dc:rlterms_additionalPersonName&gt;
additional_person_name&lt;/dc:rlterms_additionalPersonName&gt;&lt;dc:rlterms_callNumberType&gt;0&lt;
/dc:rlterms_callNumberType&gt;&lt;/dc:record&gt;</request_metadata>
726 <request_shipped>true</request_shipped>
```

If you un-escape the XML inside `request_metadata` you get:

```
&lt;?xml version="1.0" encoding="UTF-8"?&gt;
&lt;dc:record xmlns:dc="http://purl.org/dc/elements/1.1/" xmlns:dcterms="http://purl.org/dc/terms/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"&gt;
  &lt;dc:title&gt;title28080749688&lt;/dc:title&gt;
  &lt;dc:creator&gt;Author_28080749688&lt;/dc:creator&gt;
  &lt;dc:rlterms_edition&gt;1&lt;/dc:rlterms_edition&gt;
  &lt;dc:identifier_isbn&gt;28080749688isbn&lt;/dc:identifier_isbn&gt;
  &lt;dc:rlterms_additionalPersonName&gt;additional_person_name&lt;/dc:rlterms_additionalPersonName&gt;
  &lt;dc:rlterms_callNumberType&gt;0&lt;/dc:rlterms_callNumberType&gt;
&lt;/dc:record&gt;
```

```
<xsl:value-of select="parse-xml(//request_metadata)//dc:identifier_isbn"/>
```

(The output is: 28080749688isbn)

Add `xmlns:dc` namespace declaration.

Here is the whole line:

```
<xsl:stylesheet version="3.0" xmlns:dc="http://purl.org/dc/elements/1.1/" xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
```

**ExLibris**  
Part of **Clarivate**

**IGOLU**  
*International Group of Ex Libris Users*

**Thank You!**

**[Ori.Miller@clarivate.com](mailto:Ori.Miller@clarivate.com)**

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