Unlocking Your Library with the Alma Open Platform

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Agenda

- State of the Alma Open Platform
- Open Platform Highlights
- Wrap Up

State of the Alma Open Platform

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Alma Open Platform

Integrations

- Widely adopted standards
- Configure integrations with other systems

REST APIs

- Sound REST practices
- Data
- Workflows

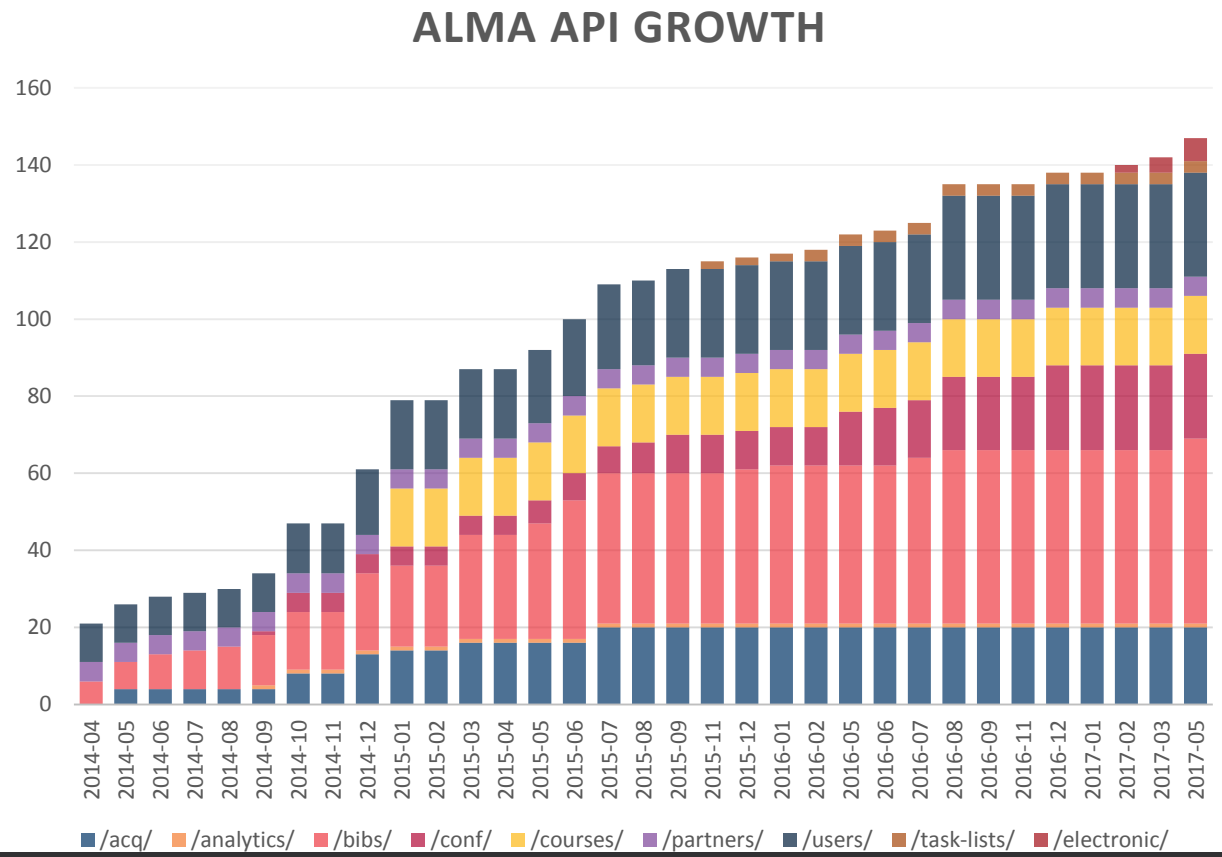
Community

- Blog
- Forum

The ABCs of Integrations

CAS	CMS	EDI	ERP	LDAP
JSON-LD	NCIP	OAI-PMH	OAuth	RDA/RDF
RFID	SAML2	SIP2	SIS	SRU
SWORD	z39.50			

Growth of REST APIs



Growth of REST API Usage

- We’ve seen the slides- 2M+ REST API calls per day; more REST API calls than screen views in Alma, etc.

- Testament to the creativity and productivity of the Alma developer community

So congratulations to YOU!

Active Community

- Highest frequency of blog posts- at least weekly
- ~ 50% contribution from the community

Active Blog

- 275+ forum discussions
- 900+ messages

Active Forum

Open Platform Highlights

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OPEN PLATFORM HIGHLIGHTS

1

Tableau Web Data Connector

Access library data in Tableau visualizations

Open source and open to everyone

2

SWORD Digital Deposit Protocol

Deposit digital materials into Alma programmatically using Alma's support for the SWORD protocol

3

Webhooks

Alma initiates calls when events happen

Sends payload to customer-hosted REST endpoint

4

Login via Email

Allows students to log in with a "magic link", and without a password

Reduces password fatigue

5

Process Orchestration

APIs to manage processes and sets

Script maintenance jobs and chain activities together

Tableau Web Data Connector

Tableau Web Data Connector

- Tableau provides a way to visualize data from various sources
  - Many customers are already using Tableau
- Can aggregate and display data from various sources
  - How can we include library data as well?
- Tableau's "Web Data Connector" technology can be used to import data from APIs

Announcing an Ex Libris web data connector for use by all Ex Libris customers! The connector is open source and available for everyone.

Tableau WDC: Open Source on GitHub

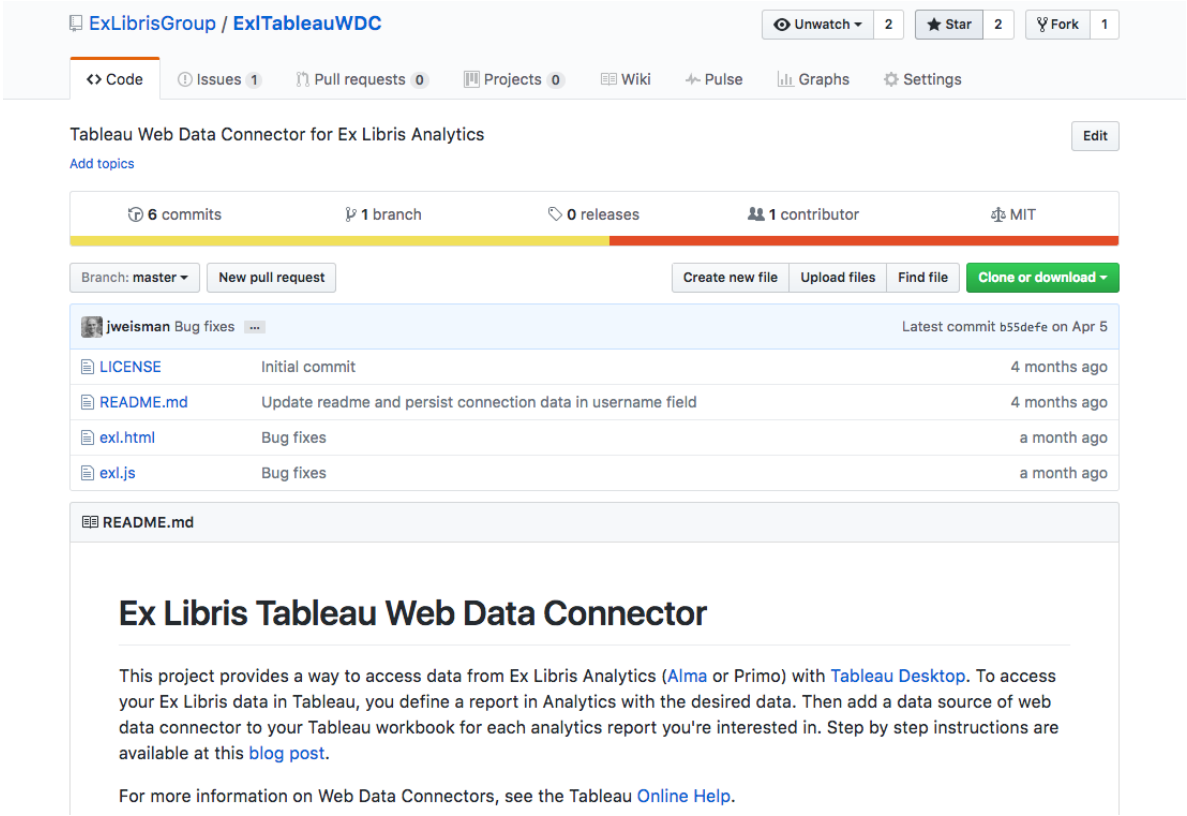


Tableau WDC: Configure Connection

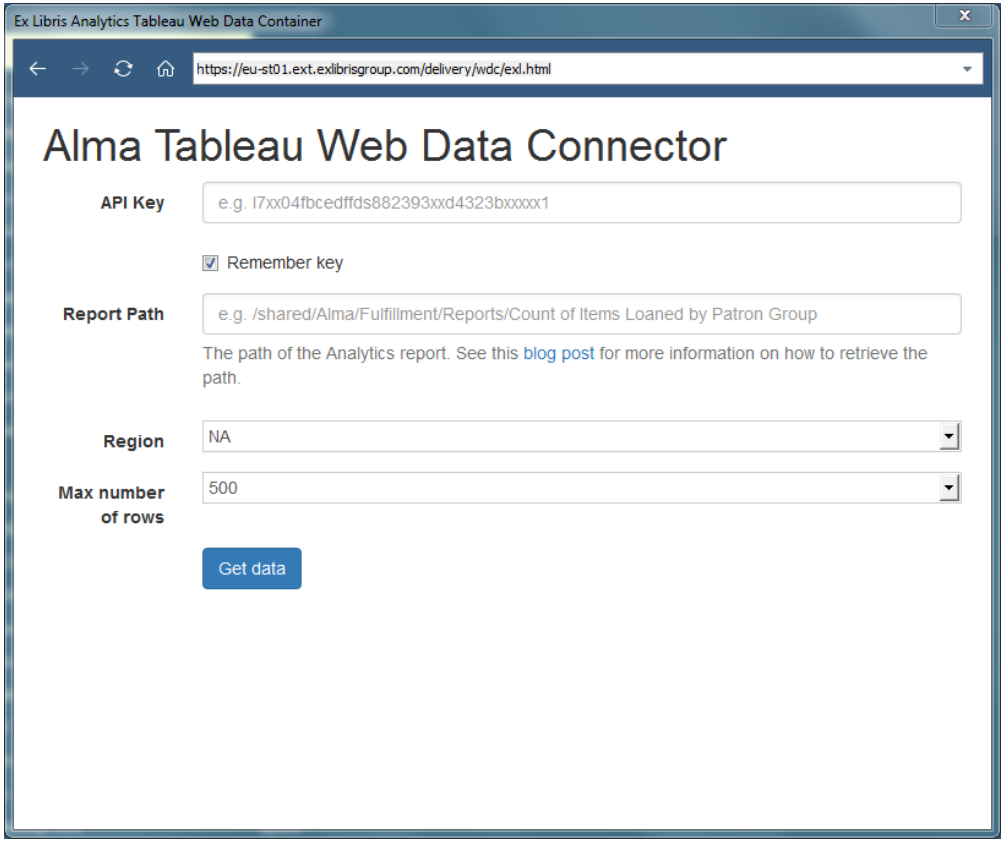


Tableau WDC: Retrieve Schema

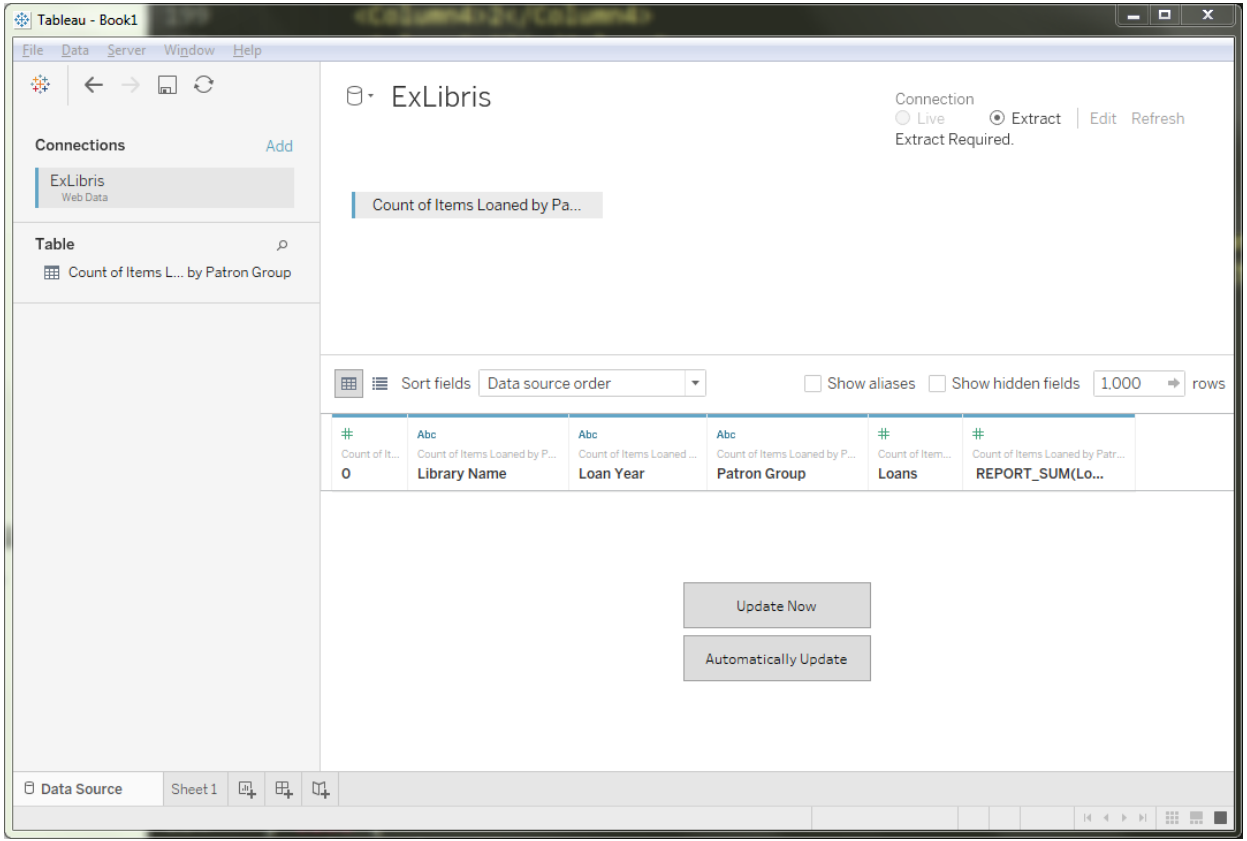
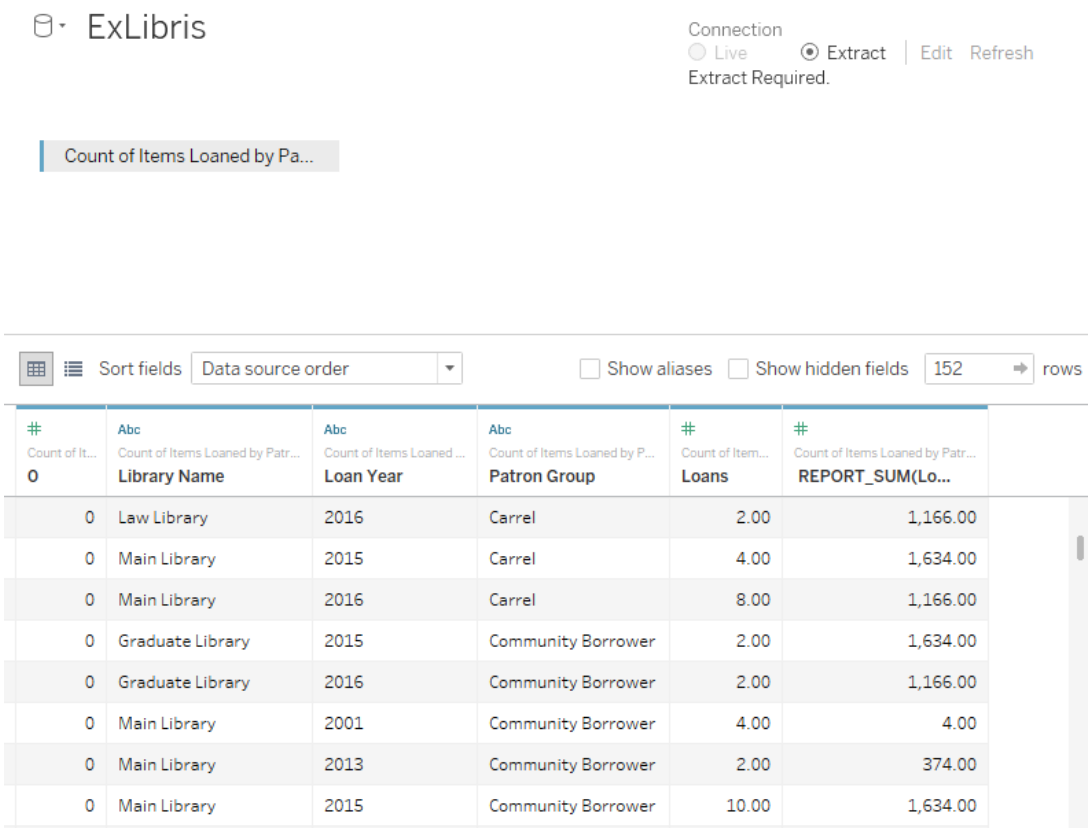


Tableau WDC: Retrieve Data



Count of It... 0	Count of Items Loaned by Patr... Library Name	Count of Items Loaned ... Loan Year	Count of Items Loaned by P... Patron Group	Count of Item... Loans	Count of Items Loaned by Patr... REPORT_SUM(Lo...
0	Law Library	2016	Carrel	2.00	1,166.00
0	Main Library	2015	Carrel	4.00	1,634.00
0	Main Library	2016	Carrel	8.00	1,166.00
0	Graduate Library	2015	Community Borrower	2.00	1,634.00
0	Graduate Library	2016	Community Borrower	2.00	1,166.00
0	Main Library	2001	Community Borrower	4.00	4.00
0	Main Library	2013	Community Borrower	2.00	374.00
0	Main Library	2015	Community Borrower	10.00	1,634.00

Tableau WDC Links

- Blog post
- “How to use” presentation
- Github Project

SWORD Digital Deposit Protocol

SWORD

SWORD (Simple Web-service Offering Repository Deposit) is an interoperability standard that allows digital repositories to accept the deposit of content from multiple sources in different formats (such as XML documents) via a standardized protocol.

Wikipedia
https://en.wikipedia.org/wiki/SWORD_(protocol)

SWORD Support in Alma

- Alma SWORD support enables an institution to create a custom deposit interface

- The workflow can be as basic or involved as desired
  - From only submitting a deposit to a full approval workflow including return edit

- Standard SWORD client toolkits can be used, such as:
  - Java: https://github.com/swordapp/JavaClient2.0
  - Ruby: https://github.com/swordapp/sword2ruby
  - Python: https://github.com/swordapp/python-client-sword2
  - PHP: https://github.com/swordapp/swordappv2-php-library/

SWORD Support in Alma

Method	Description
GET /sd	Get Service Document
GET /edit/<deposit-id>	Get Deposit details
PUT /edit/<deposit-id>	Replace metadata
POST /collection/<deposit_profile_id>	Create resource
POST /edit-media/<deposit_id>	Add content
DELETE /edit-media/<deposit_id>/<filename>	Delete content
DELETE /edit/<deposit-id>	Withdraw deposit
PUT /edit/<deposit-id> "In-Progress: false"	Submit in progress deposit

DEMO

Getting Started with SWORD Digital Deposits

Building a Deposit Application using SWORD

SWORD Links

- Developer Network Documentation
- SWORD blogs

Webhooks

Alma Webhooks

- New paradigm for communicating with Alma

- When certain events happen in Alma, Alma calls out to a customer's REST endpoint with a defined payload

Alma Webhook Benefits

- Alternative to “polling”- push rather than pull
- Respond to events in the system when they occur
- Asynchronous architecture
- Reduce API calls

Source: http://www.webhooks.org

Alma Webhook Support

- Job End
- Notifications
- User update – **NEW** in June 2017
- Others coming soon

https://developers.exlibrisgroup.com/blog/tag/Webhooks

Implementing a Webhook Listener

- Challenge- GET
  - Called when webhook listener is registered in Alma

- Webhook hander- POST
  - Called each time a particular event happens
  - Provides general information along with an event-specific payload
  - Includes a signature header to ensure the request came from Alma

DEMO

Webhook listener

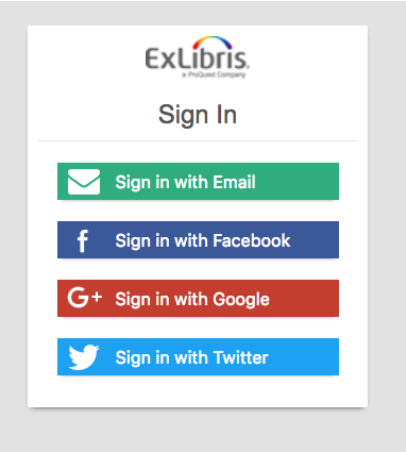
Webhooks Links

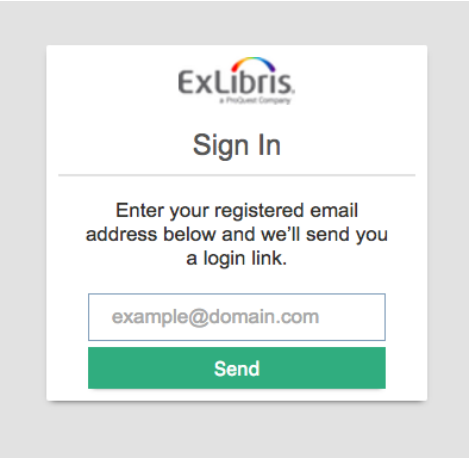
- Developer Network Documentation
- Webhooks blogs

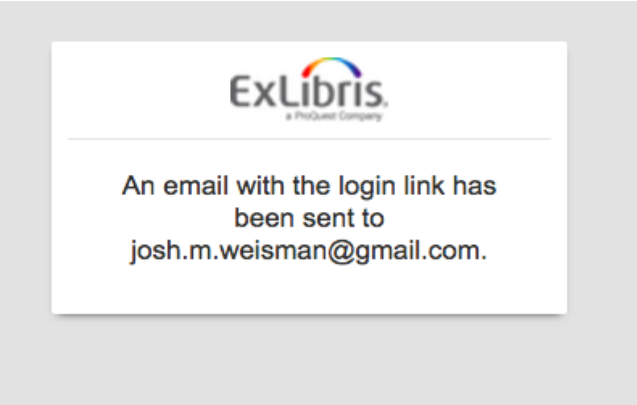
Login via Email

Login via Email

- Users are registered in Alma with an email address by the circulation desk (or by the RESTF APIs)
- When users wish to login to Primo, they select the “login via email” option and provide their registered email address

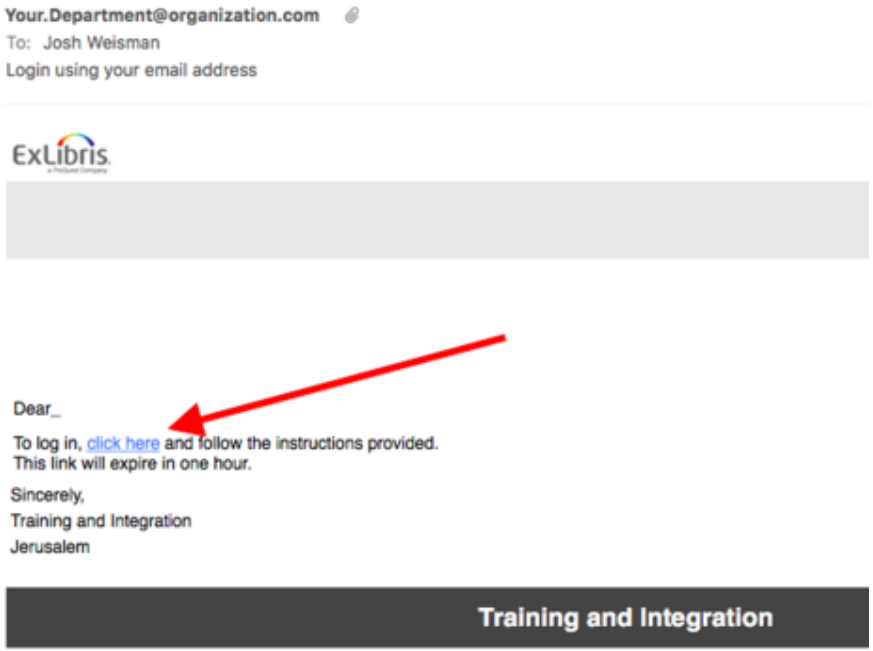






Login via Email

- An email with a “magic link” is sent to the user. The user can click the link within 30 minutes and is automatically logged in to Primo. No password required.
- The link is cryptographically signed to prevent spoofing



DEMO

Login with Email

Process Orchestration

Process Orchestration Explained

Orchestration is the automated arrangement, coordination, and management of computer systems, middleware and services.

Wikipedia, https://en.wikipedia.org/wiki/Orchestration_(computing)

- Alma performs bulk work on sets of various types (bibliographic records, users, items, etc.)
- The work to be performed is defined in jobs of many types (bibliographic record export, remote storage, metadata import, etc.)
- Alma faciltates orchestration workflows with APIs to manage jobs and sets

Key APIs

- Jobs
  - GET jobs, job details
  - POST to run a job (scheduled or manual)
- Job instances
  - GET job instance details (status, outcomes, etc.)
- Sets
  - GET sets, set details
  - Create/delete itemized or logical set
  - Add/remove members from sets

Create logical set query language

Create a Set

- Resource URL
- URL Parameters
- Query string Parameters
- Body Parameters
- Output
- Possible Error Codes

API Version: v1
Body object: Set
HTTP Method: POST

Web service for creating a set.

You can use this API to create 2 types of sets:
1. Itemized set
2. Logical set
Creating logical sets is supported for Inventory related entities (not supported for PO-Lines, Users etc).
It is possible to create an itemized set and populate it from a logical set by setting the logical set id in the from_logical_set parameter.
It is also possible to create an itemized set which is based on MD import job by providing job instance id and population.
For more details about MD import itemized set click here

Details regarding the syntax for creating Logical Sets can be found here

Logical Set Query Reference

Introduction

The 'Create a Set' API can be used to create logical sets for Resource Management content types (Bibs, Items, Portfolios, Digital representations, etc.).
The exact syntax which is needed for creating a set using the API can be determined by first creating a set using the UI, running the 'Retrieve a Set' API to view the syntax, and then use the provided syntax as a template for creating other similar logical sets using the API. An example and detailed explanation can be found in this blog post.

Examples

A set of Physical Items can be created using criteria from the Bib record, the Holdings record and the Item record. This example shows a search for items using fields from the related Bib record and the location (which is stored under the Holdings record):

```
ITEM where BIB_MMS (title CONTAIN "history") and
          HOLDING (holding_Library OUTER_EQUAL "ART")
```

The syntax begins with the type of set, in this case ITEM. Then it lists the limiting criteria - first the level, followed by triplets of field code, operator, and value.
The next example demonstrates a search for titles which contain either 'history' or 'writing' in the title:

```
BIB_MMS where BIB_MMS (title CONTAIN "history" OR title CONTAIN "writing")
```

Here the two criteria triplets are separated by the Boolean operator 'or'.

List of Fields and Operators

The below table provides a reference of all indexes for the relevant Resource Management entities in Alma, as configured for the Guest Sandbox. For each index, the level, field code, and supported operators are listed.
Set content type BIB_MMS

Level	Field	Code	Operations
BIB_MMS	Content type code	content_type_code	NOT_EQUAL, OUTER_EQUAL, EMPTY
BIB_MMS	Carrier type code (Title)	carrier_type_code	NOT_EQUAL, OUTER_EQUAL, EMPTY
BIB_MMS	Originating System	mms_originatingSystem	CONTAIN, EQUAL, EMPTY
BIB_MMS	dc:source	dc_source	NOT_EQUAL, OUTER_EQUAL, EMPTY
BIB_MMS	Type	type	CONTAIN, EQUAL, OUTER_EQUAL,

DEMO

Build a logical set

Run a manual job

Process Orchestration Links

- Jobs & Sets APIs on the Developer Network
- Blog: Working with the Alma Jobs API
- Other blog posts on Jobs

Wrap Up

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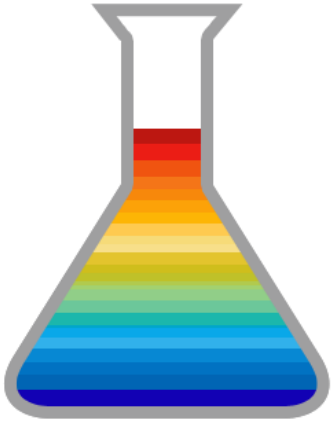
Developer Network Tips & Tricks

- Blog RSS
- Google is your friend
- Configuring Apps- environment, APIs, and permissions
- The forum is the place to get help



Important Links

- Getting started
- Demos/samples:
  - General
  - C#,
  - Java,
  - Angular,
  - Ruby
- API Thresholds
- Working with the APIs in a network

Summary

- APIs and integration protocols allow you to extend Alma beyond its built-in features

- Documentation, samples, and standards allow your developers to focus on your specific requirements and not on “plumbing”

- You’re a critical part of the community- share your efforts on the Developer Network!

THANK YOU

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