



The Alma Course API

An Exercise in Course Integration

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History

- ▶ Migration to Alma in 2013
 - ▶ Ex Libris did not assist in this
 - ▶ SOAP API was available
 - ▶ First version of client wrapper
- ▶ SOAP and REST
 - ▶ 2015 Ex Libris announced deprecation of SOAP
 - ▶ Middle 2015 accelerated deprecation
 - ▶ Second version of client wrapper
- ▶ Leganto
 - ▶ Third version (refined) of client wrapper
 - ▶ Fourth version of client wrapper



Why use the Alma Courses API?



- ▶ Alma Course Loader restriction
 - ▶ Choose anytime out of 4 but only once a day
 - ▶ Run once a day using Alma Course Loader
- ▶ Flexibility
 - ▶ Run twice or more a day using Courses API
- ▶ Failed job runs
 - ▶ Points of failure – network, database, Alma
 - ▶ Retry manually at will or automatically

The Integration Project

- ▶ Deprecation of OLAS by OLAE
- ▶ Changed business rules
- ▶ Change of source data structure
- ▶ New requirement
- ▶ Elevated importance of the Reading List



Project Considerations



- ▶ API Quotas
 - ▶ Quota is summed over all applications
 - ▶ Analytics, User, Courses, etc
 - ▶ Use it sparingly and wisely and factor this in your approach
 - ▶ High cost incurred
 - ▶ Minimize frequency of invoking Courses API
- ▶ Frequency of source updates
 - ▶ Built-in Alma Course Loader runs once a day



Project Considerations (cont'd)

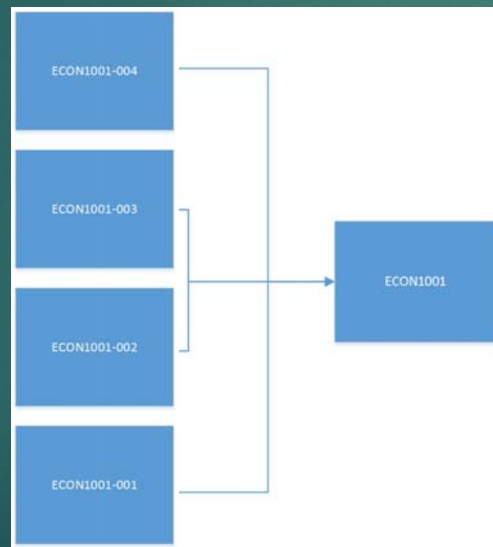
- ▶ Course field mappings

- ▶ Know the mappings before developing the Course Loader

Alma Course	Source
Course code	BB Course code
Title	BB Course title
Instructors	Unit Coordinator, other associated academics
Processing department	OLAE (add a note for indexed searching)
Academic department	Faculty / School name and code
And so on	And so on

Project Considerations (cont'd)

- ▶ Requirement
 - ▶ Course collapsing and parent-child course relationships
 - ▶ A problem
 - ▶ Promised before technical feasibility study!! ☹



Project Considerations (cont'd)

- ▶ LTI Protocol
 - ▶ How does it support this?
 - ▶ BB sets LTI context_label parameter
 - ▶ For collapsed courses – parent course code
 - ▶ For normal courses – the course code



Project Considerations (cont'd)

Response Code: 200 Found a single list 4919231820001951 for course MINE6034-FacSciEng-2100012141

```
-----LTI Servlet-----
-----path parameters-----
institute=
tool=
debug=true
ext_lms=bb-9.1.201410.160373
oauth_nonce=
custom_lis_course_id=MINE6034-FacSciEng-2100012141
oauth_consumer_key=
context_label=MINE6034-FacSciEng-2100012141
lis_person_name_family=
resource_link_id=
oauth_callback=about:blank
custom_lis_user_role=N
oauth_signature=
launch_presentation_return_url=
tool_consumer_info_version=9.1.201410.160373
lti_version=LTI-1p0
oauth_signature_method=
tool_consumer_instance_contact_email=
user_id=
lti_message_type=basic-lti-launch-request
tool_consumer_info_product_family_code=Blackboard Learn
tool_consumer_instance_guid=
launch_presentation_document_target=window
resource_link_description=Access to reading and study material (Guided and independant studies) for Rock and Soil Slope Stability
context_title=Rock and Soil Slope Engineering
oauth_version=
tool_consumer_instance_name=
ext_launch_id=
custom_lis_user_username=
lis_person_name_full=
resource_link_title=Reading List
context_id=
roles=urn:lti:role:mis:ls/teachingAssistant
lis_person_contact_email_primary=
lis_person_name_given=en-US
launch_presentation_locale=en-US
oauth_timestamp=1469515608
ext_launch_presentation_css_url=
/coursetheme.css
-----headers-----
host=curtin-a.alma.exlibrisgroup.com
user-agent=Mozilla/5.0 (Windows NT 6.1; WOW64; rv:47.0) Gecko/20100101 Firefox/47.0
accept=text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8
accept-language=en-GB,en;q=0.5
accept-encoding=gzip, deflate, br
referer=
content-type=application/x-www-form-urlencoded
content-length=2059
```

Alma Configuration

< Integration Profile

LMS

Code [REDACTED]

Integration Type LTI Tool

General Information Actions Contact Info

LTI DEFINITIONS

LTI Type * Reading List

LTI Version * 1.X

Launch URL https://ap01.alma.exlibrisgroup.com/lti/launch?institute=[REDACTED]&tool=[REDACTED]

LTI Key [REDACTED]

LTI Secret [REDACTED]

In embedded mode, select which Leganto panels should be hidden by default:

Top (User menu and language settings)

Left (Navigation and notifications)

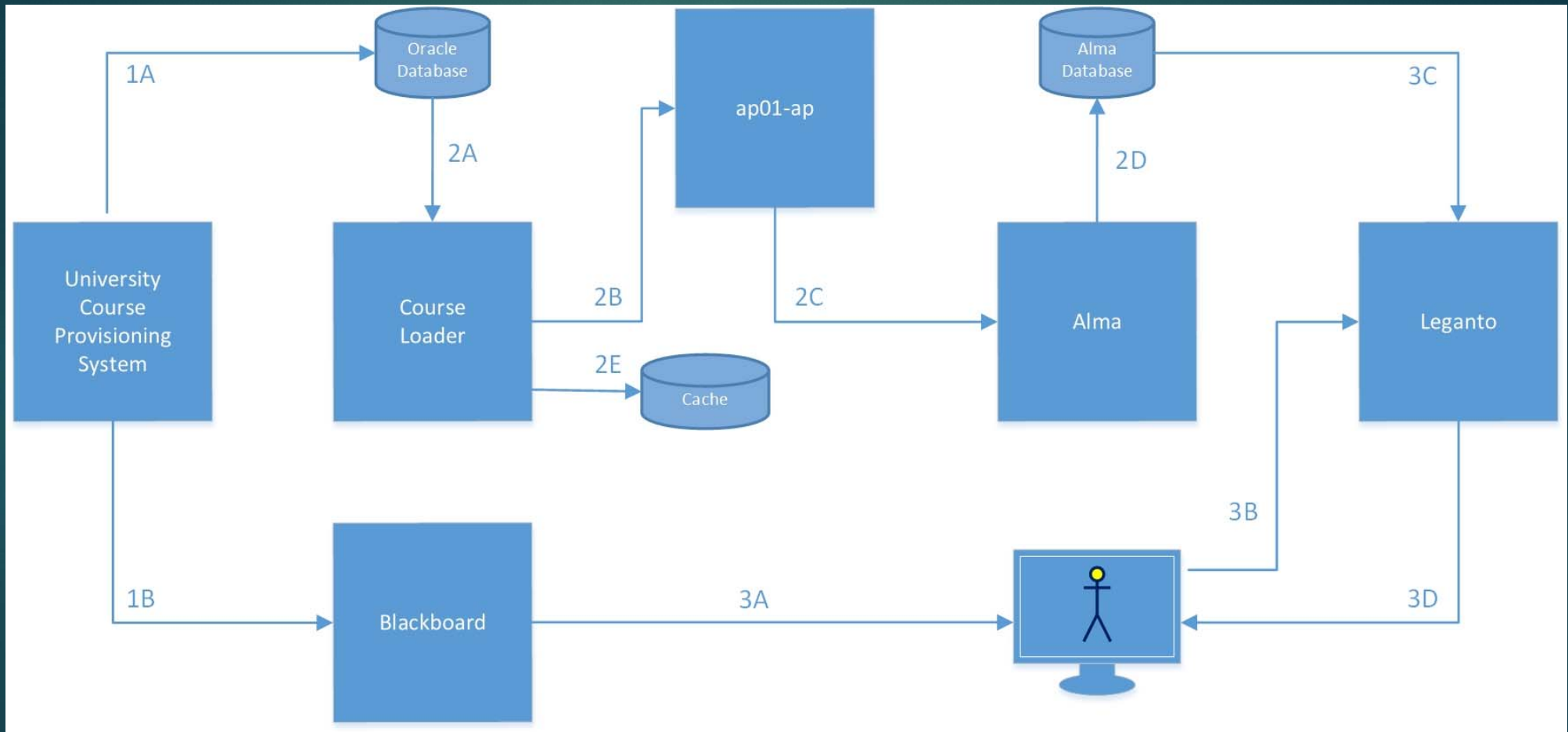
Both

None

User ID Field Name [REDACTED]

Course Code Field Name context_label

Integration – Course Loader



Traps

- ▶ Loading the API server
 - ▶ Timeouts
 - ▶ Strange things happen
 - ▶ Valid results come back as XML but you asked for JSON
- ▶ Error handling
 - ▶ Be prepared to handle errors
 - ▶ Missing courses and updates
- ▶ Errors come back in XML
 - ▶ Even if you asked for JSON
 - ▶ Stick to XML if you don't want to parse XML and JSON



Lessons

- ▶ Questions to ask
 - ▶ Is it even possible?
 - ▶ Who shoulders what responsibilities?
 - ▶ How do you get data out of the primary source system?
 - ▶ How do you map and put data into Alma?
- ▶ Manage the Project Managers
 - ▶ Pre-empt them especially when they make decisions without you
 - ▶ Pester them till they pay attention to you
- ▶ Prepare early
 - ▶ Groundwork
 - ▶ Document everything
 - ▶ Start your integration work (design, planning, etc)
 - ▶ Voice your concerns
 - ▶ Be wary of everyone's schedules and changes



Lessons (cont'd)

▶ Schedules

- ▶ Second and third party delays (not if but when and how long)
- ▶ Insist that their delays will impact YOUR schedule; bang tables if needed
- ▶ Manage the managers, pester external developers



Lessons (cont'd)

- ▶ Be efficient in programming
 - ▶ The same API gateway for
 - ▶ Analytics, Bibs, Courses, Users
 - ▶ Acquisitions, Tasks-list, Resource Sharing Partners, etc
 - ▶ The same back-end Alma server
- ▶ Use last run timestamp
 - ▶ Primo pipes last run timestamp
 - ▶ Limits the window of interest
- ▶ Caching
 - ▶ Consistent state reflection of courses between Alma and business system
 - ▶ Only 5% of source updates are relevant



Lessons (cont'd)

- ▶ Logging
 - ▶ A good debugging tool
 - ▶ A good audit trail
 - ▶ Own business systems and Alma API server



Lessons (cont'd)

- ▶ Use your past integration experiences
 - ▶ Past experiences are valuable moving forward
 - ▶ If you have done this before at least once
 - ▶ Hiccups can and will happen
- ▶ Know the risks
 - ▶ Integration goes badly
 - ▶ Instructors outright reject Leganto
 - ▶ Library's reputation goes south



QUESTIONS
&
ANSWERS

