

Streamline your Course Management System integration with Basic LTI

With Angela Mott

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Let's talk about

- Why do this?
- Will my CMS be able to connect to Ares?
- How does it work?
- Sticky Issues to consider
- Additional Thoughts
- Q&A

Lingo to know: CMS = Course Management System(s)

Why might I want my CMS to talk to Ares?

- Your students and faculty are already using your CMS. That's where they are finding the syllabus, class discussions, the assignments, even turning in their work. Why not find their course readings as well?
- Your students can log into the CMS and then the CMS can dictate what courses they have access to, what their User account information is in Ares, and what their roles are within the Ares course.
- Your patrons do not have to register; entry via the CMS takes care of that for them.
- Your instructors don't actually have to create a course manually in Ares; just clicking the link creates the course.

Which kinds of CMS can connect to Ares?

- Any CMS that can use Basic LTI can connect to Ares. For example:
 - Canvas
 - Brightspace (D2L/Desire2Learn)
 - Sakai
 - Blackboard
 - Moodle
 - ANGEL

Note: Blackboard, Moodle and ANGEL also have CMS-specific building blocks/plugins that can be used. These are specific to a particular CMS, they are not updated very often, and they are not really flexible. They are pretty close to plug and play, however these can also use LTI instead and that gives us much more flexibility in field mapping the available parameters between the CMS and Ares.

How does this really work?

There are only 4 main steps to integration.

First: Create the External Tool in the CMS

In your CMS, an External Tool will be created.

It needs to pass the User's information and the Course's information.

It will point to your Ares webservice with a URL like this:

<http://ares.myuniv.edu/ares/WebService/BasicLti/Launch>

When your instructors enter the CMS, they may have to add the External Tool to their course for it to show up for their course.

Every CMS adds External Tools differently, so having a CMS admin involved is usually required.

The screenshot shows the Brightspace CMS interface for editing a link. The page title is "Edit Link - Ares Course Reserves". The breadcrumb navigation includes "Course Home", "Content", "Course Materials", "Assessments", "Communication", "Resources", and "Edit Course".

Properties

- Title ***: Ares Course Reserves
- URL ***: <http://akm-alpha.cloudapp.net/ares/webservice/basiclti/laur>

Description

Connection to the Ares Course Reserves system at the Library

Visibility

- Allow users to view this link

Key/Secret

Signature

- Sign messages with key/secret with
 - Tool consumer key/secret
 - Link key/secret

Key

thisisakey

Secret

Reset secret

Custom Parameters

No items found.

[Add custom parameters](#) 1

Security Settings

Second: Set up the LTIConsumers Table

Remember:

The key and secret will match what you created in your CMS for the External Tool.

You can have multiple instructor roles separated by commas.

Capitalization matters for the Instructor Roles.

If you have multiple sets of webpages, you indicate which one will be used for your CMS users here.

The screenshot shows the Ares Customization Manager interface. The title bar reads "Customization - Ares Customization Manager". The interface includes a search bar with "lti" entered, a "Search" button, and various tool icons like "New Record", "Copy Record", "Save", "Delete", "Cancel", and "Setup Wizards". The left sidebar shows a tree view with "LTIConsumers" selected. The main area displays a table titled "LTIConsumers" with the following data:

Consumer Key	Shared Secret	Instructor Roles	Ares Web URL
thisiskey	thisisasecret	Instructor	

Below the table is an "Edit Row" section with the following fields:

Consumer Key	thisiskey
Shared Secret	thisisasecret
Instructor Roles	Instructor
Ares Web URL	

Request Details - Ares Course Reserves

Third: Examine the LTI Params from the CMS

There are a few different ways to view the parameters that the CMS is sending:

1. Click the link in the CMS and look in the WebService logs on your Ares server.
 - These are usually on your server in the C:\Ares\Log folder, but could be located elsewhere. If you need help setting up logging, let Atlas know and we can help.
2. Temporarily change the URL in the External Tool to:

<http://ares.myuniv.edu/ares/WebService/BasicLti/ShowLTIParams>

 - This way you can just click the link from a course and see the params displayed in your web browser.
3. Some CMS allow you to preview the parameters, like Brightspace here ->

```

<html>
<body>
<div id="ltiLaunchFormSubmitArea">
<form method="post" id="LtiRequestForm" name="LtiRequestForm" action="http://akm-alpha.cloudapp.net/ares/webservice/basiclti/showlitparams"
  enctype="application/x-www-form-urlencoded">
<input type="hidden" name="lis_result_sourcedid" value="5a8f4de5-90d1-427c-b0d1-6df6da5fd0e5">
<input type="hidden" name="ext_d2l_token_id" value="407190">
<input type="hidden" name="ext_d2l_link_id" value="154">
<input type="hidden" name="ext_d2l_token_digest" value="vac2zWVcJ18k4s2EzhDgEH9tGx8=>
<input type="hidden" name="launch_presentation_locale" value="EN-US_">
<input type="hidden" name="tool_consumer_instance_guid" value="">
<input type="hidden" name="tool_consumer_instance_name" value="">
<input type="hidden" name="tool_consumer_instance_description" value="">
<input type="hidden" name="tool_consumer_instance_contact_email" value="">
<input type="hidden" name="tool_consumer_info_version" value="10.5.3">
<input type="hidden" name="tool_consumer_info_product_family_code" value="desire2learn">
<input type="hidden" name="context_id" value="17662">
<input type="hidden" name="context_title" value="Angela Mott Sandbox">
<input type="hidden" name="context_label" value="SB3609">
<input type="hidden" name="context_type" value="CourseOffering">
<input type="hidden" name="user_id" value="5933ad6d-0a27-441a-b94f-b49d3652631c_2643">
<input type="hidden" name="roles" value="urn:lti:instrole:ims/lis/Instructor,Instructor">
<input type="hidden" name="lis_person_name_given" value="Angela">
<input type="hidden" name="lis_person_name_family" value="Mott">
<input type="hidden" name="lis_person_name_full" value="Angela Mott">
<input type="hidden" name="lis_person_contact_email_primary" value="amott@atlas-sys.com">
<input type="hidden" name="ext_d2l_username" value="amott@atlas-sys.com">
<input type="hidden" name="ext_d2l_orgdefinedid" value="3609">
<input type="hidden" name="ext_d2l_role" value="Attendee">
<input type="hidden" name="ext_tc_profile_url" value="https://fusionresources.desire2learn.com/d2l/api/ext/1.0/lti/tcservices">
<input type="hidden" name="resource_link_id" value="">
<input type="hidden" name="resource_link_title" value="Ares Course Reserves">
<input type="hidden" name="resource_link_description" value="Connection to the Ares Course Reserves system at the Library">
<input type="hidden" name="lis_outcome_service_url" value="https://fusionresources.desire2learn.com/d2l/le/lti/Outcome">
<input type="hidden" name="lti_version" value="LTI-1p0">
<input type="hidden" name="lti_message_type" value="basic-lti-launch-request">
<input type="hidden" name="oauth_version" value="1.0">
<input type="hidden" name="oauth_nonce" value="b3f7d7f7-a6bd-49af-84b3-634b8939d58d">
<input type="hidden" name="oauth_timestamp" value="1447944555">
<input type="hidden" name="oauth_signature_method" value="HMAC-SHA1">
<input type="hidden" name="oauth_consumer_key" value="thisisakey">
<input type="hidden" name="oauth_callback" value="about:blank">
<input type="hidden" name="oauth_signature" value="e6Mahlsw/lUCGunQ5y6EMXfbxDY=>
<input type="submit" name="ext_basiclti_submit" value="Launch Endpoint with BasicLTI Data">
</form>
</div>
<script language="JavaScript">
  document.getElementById('ltiLaunchFormSubmitArea').style.display = 'none';
  nei = document.createElement('input');
  nei.setAttribute('type', 'hidden');
  nei.setAttribute('name', 'ext_basiclti_submit');
  nei.setAttribute('value', 'Launch Endpoint with BasicLTI Data');
  document.getElementById('LtiRequestForm').appendChild(nei);
  document.LtiRequestForm.submit();
</script>

```


Fourth: Set up the LTIFieldMappings table

A few things to notice:

The fields set up by default are just the defaults. Rarely, if ever, would these work for anyone without needing changes.

The ExternalUserId and ExternalCourseId fields have an Ares Object Name of "Context" unlike the others.

The ExternalUserId and ExternalCourseId are the ONLY fields that will be matched on to locate an existing user or course. The other fields are able to be filled in with the LTI parameter values, but cannot be searched upon.

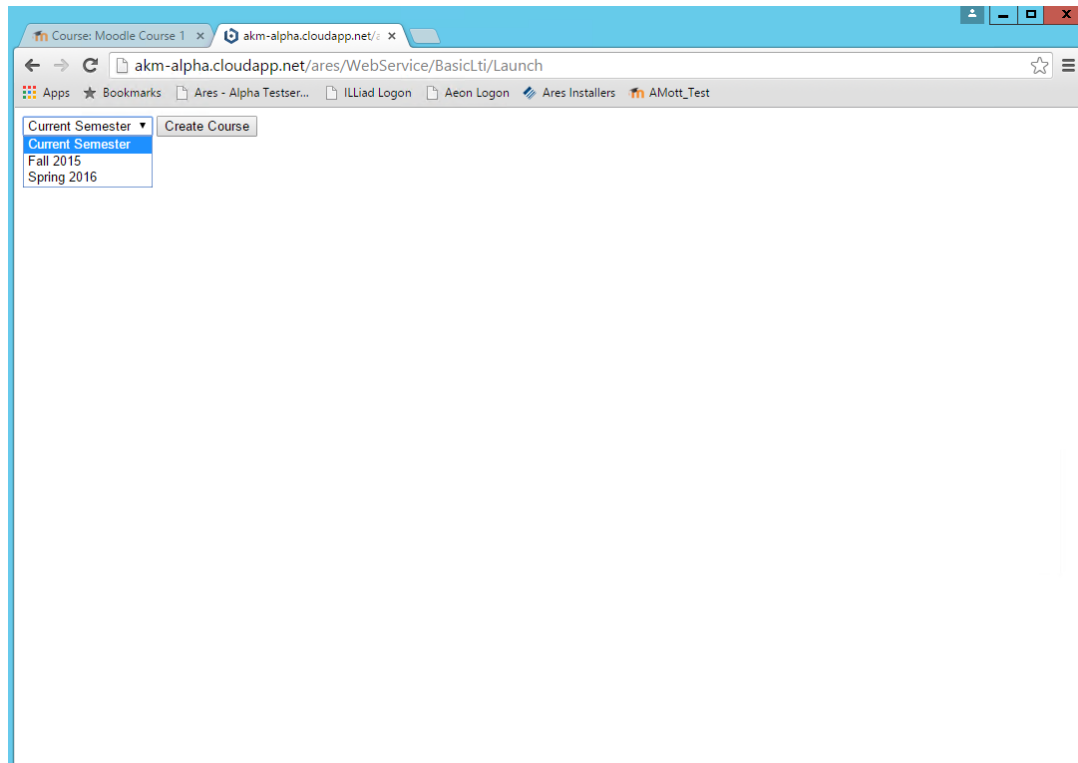
The screenshot shows the Ares Customization Manager interface. The main window displays the configuration for the LTIFieldMappings table. The table has three columns: Ares Field Name, Ares Object Name, and LTI Field Name. The rows are as follows:

Ares Field Name	Ares Object Name	LTI Field Name
ExternalCourseId	Context	lis_course_section_sourcedid
ExternalUserId	Context	ext_user_username
CourseNumber	Course	context_label
Name	Course	context_title
EEmailAddress	User	lis_person_contact_email_primary
FirstName	User	lis_person_name_given
LastName	User	lis_person_name_family
LibraryId	User	ext_user_username
Username	User	ext_user_username

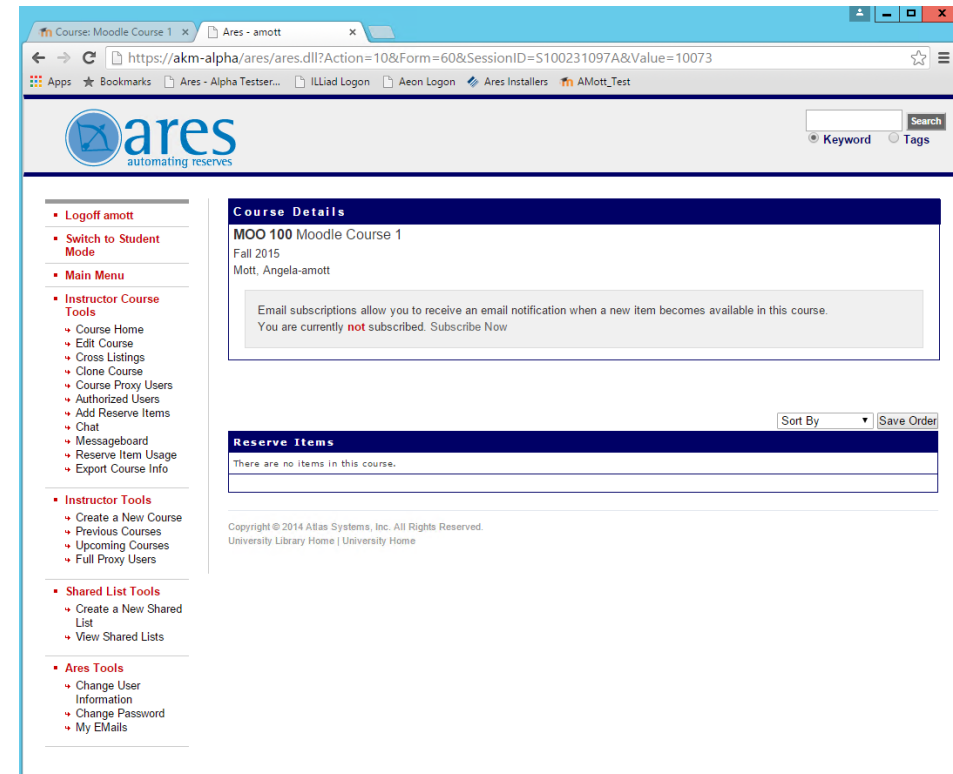
The interface includes a search bar at the top with the text "Search All Tables and Keys" and a search input field containing "lti". The left sidebar shows a tree view of tables, with LTIFieldMappings selected. The top toolbar contains various icons for actions like Show Change History, Maintenance, Search, Favorites, New Record, Copy Record, Save, Delete, Cancel, and Setup Wizards.

What will an instructor see?

Upon first clicking the link:



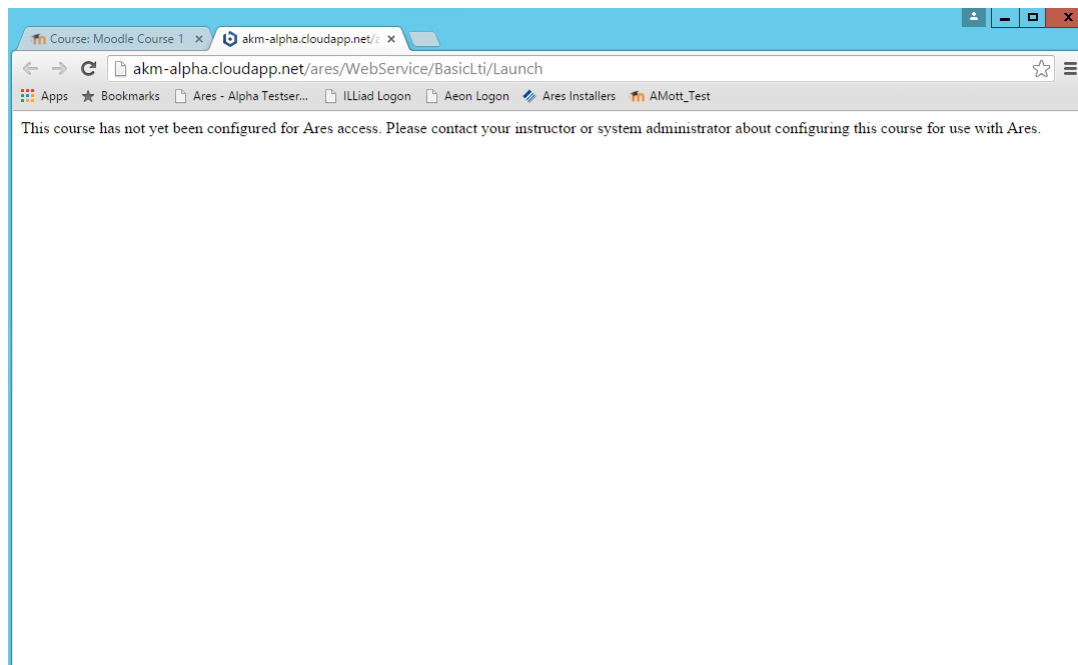
After choosing the semester:



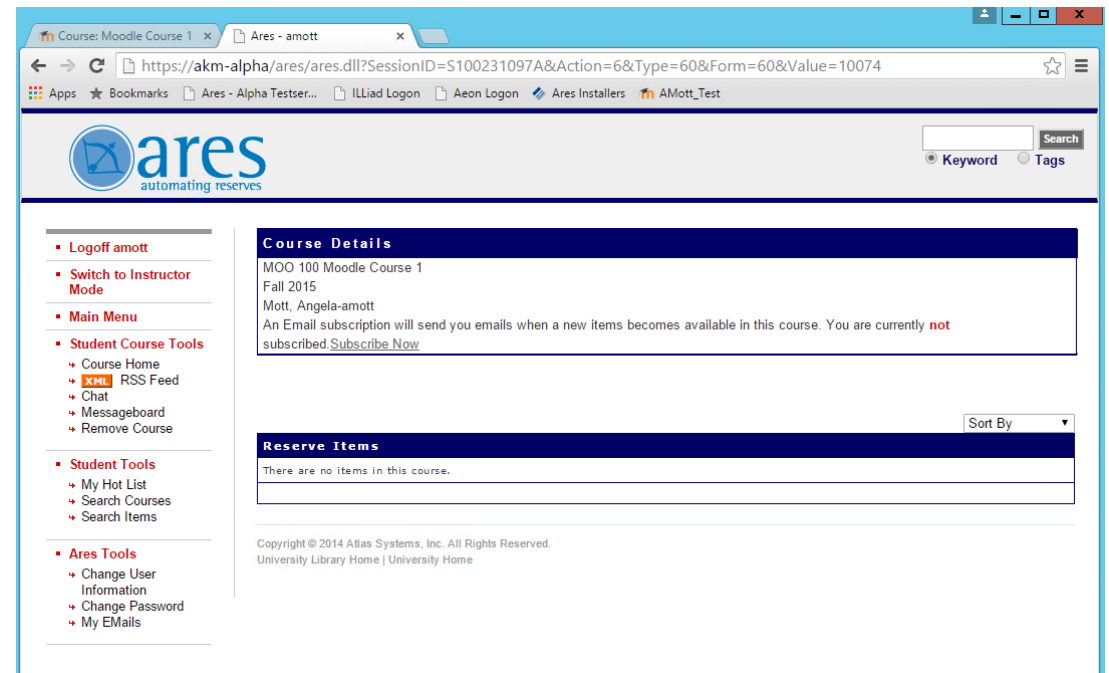
*Since the 4.5.2.0 Server point release in August 2015, the semester dropdown only includes valid semesters.

What will a student see?

If the course does not yet exist in Ares:



If the course already exists in Ares:



* “This course has not yet been configured for Ares access. Please contact your instructor or system administrator about configuring this course for use with Ares.”

Sticky Spots

What are some issues that could cause problems for me?

There are two common roadblocks:

Username values not matching

- Current RemoteAuth or LDAP Usernames need to be available in the LTI Parameters.
- You may be able to include custom parameters in your CMS.
- Consider if having the Username, LibraryID and ExternalUserId values all match would work best for you.
- If Usernames do need to change, we would need to do a Username Conversion.

ExternalCourseId values not matching

- The ExternalCourseId must be a unique value (forever).
- If you are using CourseUser Loads you need to include the ExternalCourseId with the Course information from the Registrar.
- Courses in your CMS will be 1:1 matches with Courses in Ares (and also in your CourseUser Loads if you are doing that).

Additional Thoughts

Some features and ideas to consider

Multiple CMS *can* work, but it is tricky

- If one CMS can be used with a building block or plugin and the other can use LTI, this can work well.
 - Requires Usernames and ExternalUserId values to be consistent.
- If multiple CMS need to connect with LTI it *might* work IF...
 - Usernames, ExternalUserId values are consistent
 - LTI parameters are either the same or mutually exclusive between the two CMS

Consider using the CourseCreation feature

- CourseCreation is a feature whereby all courses sent via CourseUser load are created in Ares (rather than needing to be imported by the instructor or staff).
- Benefits:
 - Your Courses can include information that isn't included in the LTI params.
 - Your Courses can have a DefaultPickupLocation set by the CourseUser load.
 - Your instructors do not have to be the first person to click the External Tool link to create the course.
 - Students will never get the error that the course hasn't yet been created.

Consider using the UserCreation feature

- UserCreation is a feature whereby all users sent via CourseUser load are created in Ares.
- Pros:
 - Your User records can include information that isn't included in the LTI params.
- Cons:
 - You might have a LOT more users coming in via CourseUser load than will ever actually be using Ares. (Think about those sites with 50,000 FTE.)

Questions?

If you think of questions later, I'm happy to help!

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