LMS Integration - Blackboard Learn

28 January 2020
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Overview

LMS integration with Blackboard Learn can be implemented using the kuraCloud building block. Your ADI Customer Support manager can provide you with a copy of the building block.

The kuraCloud Building Block adds the following functionality to your kuraCloud and Blackboard Learn environments:

- Synchronization of students from Blackboard Learn courses to kuraCloud courses.
- Synchronization of student kuraCloud grades to Blackboard Learn.

Before you start

Choose the kuraCloud.war that is appropriate for your blackboard installation. The earliest integration version is for Blackboard Learn version 9.1 Q2 2016 (3000.1.0-rel.52+991d). You can find more information about what version you need by checking the Requirements & Release Notes section of the community page.

**CARE REQUIRED:** It is strongly recommended that LMS integration is trialled in a test environment before rolling-out to your production Blackboard Learn installation. There is no ‘undo’, so if unintended changes are made to courses or students they will need to be manually fixed.

Setup

LMS integration is disabled by default on new and existing instances. A request to have it enabled for an instance can be submitted via your ADInstruments representative.

Setup is required from within both kuraCloud and Blackboard Learn and will require an administrative account on both platforms. The following steps outline the initial setup, however a more detailed guide with screenshots may be found in Appendix A. Please consult the Blackboard documentation if you’re intending to install the building block in Learn SaaS https://help.blackboard.com/Learn/Administrator/SaaS/Building_Blocks.

1. **Activate LMS integration**

Contact your ADInstruments representative to have LMS integration enabled for your kuraCloud instance.

2. **Obtain a token**

Generate a token within kuraCloud to enable communication with Blackboard Learn:

- As a kuraCloud Administrator navigate to *Instance Administration*.
- Select *LMS Integration* then *Configure LMS Integration*. Please note this menu will not be visible until LMS Integration is enabled for your kuraCloud Instance.
- Select *Blackboard* from the drop-down menu then press the *Enable LMS Integration* button. Copy the provided token to a safe place. This is important because your token can be viewed only once in kuraCloud, losing this will require the generation of a completely new token.
CARE REQUIRED: It is strongly recommended that a new token is generated for your production Blackboard installation following trials within a test environment. This will ensure data from your test environment is no longer synchronized with kuraCloud.

3. Acquire the kuraCloud Building Block
Visit https://www.adinstruments.com/support/lt#downloads to acquire the latest version of the building block. Be sure to choose the appropriate Java8 or Java11 version for your environment.

4. Install the kuraCloud Building Block
Navigate to the Blackboard Learn Administrator Panel to install the Building Block:

- Select Building Blocks from the Building Blocks menu, then navigate to Installed Tools.
- Select Upload Building Blocks and browse to your kuraCloud.war file. Click Submit.
- Review the required Blackboard Learn privileges for kuraCloud integration, then click Approve.
- Click Return when installation completes.
- On the Installed Tools page, locate the kuraCloud Building Block and click its drop-down menu, select Settings.
- Enter your token in the provided field and click Add.
- Verify the token has been accepted by checking your kuraCloud instance name and instance ID are now listed.

The kuraCloud Building Block can also be uninstalled from the Installed Tools page within Blackboard Learn.
Configuration

The following steps outline the configuration of kuraCloud integration from within Blackboard Learn. A more detailed guide with screenshots may be found in Appendix B.

Creating a Course Mapping

Before following these steps you must ensure that the course(s) to be mapped exist in both kuraCloud and Blackboard Learn.

Navigate to the Blackboard Learn Administrator Panel to map courses:

- Select kuraCloud Sync from the Tools and Utilities menu.
- Select the courses to be mapped from the provided drop-down menus, then click the Add button. This new course mapping will appear at the top of the page. This may also be verified in kuraCloud by navigating to the Student Accounts menu within the course, it will read ‘Blackboard Connected’.

Note: When mapping is complete you will no longer be able to edit the students from within that kuraCloud course.

Enable Synchronization for a single Course Mapping

Within Blackboard Learn navigate to your course’s Home Page to enable kuraCloud synchronization:

- From Course Management expand the Customization menu.
- Select Tool Availability and locate the following entries:
  - kuraCloud Grade Sync
  - kuraCloud Student Sync
- Check the appropriate boxes in the Available column then click the Submit button.

The kuraCloud Student Sync option will now be available in the Course Tools menu.

Enable Synchronization for all Course Mappings

Navigate to the Blackboard Learn Administrator Panel to enable kuraCloud synchronization for all mapped courses, and all courses that will be mapped from this point forward:

- From the Courses menu select Course Settings.
- Select Course Tools and locate the following entries:
  - kuraCloud Grade Sync
  - kuraCloud Student Sync
- Toggle the appropriate switches in the Availability column.
- In the Scope of Change column select how you will apply these changes to new and existing courses, then click the Submit button.

Note: If you are using child courses within Blackboard Learn, only the parent course will be shown in the
Removing a Course Mapping

Navigate to the Blackboard Learn Administrator Panel to remove a course mapping:

- Select kuraCloud Sync from the Tools and Utilities menu.
- Under the Remove a Course Mapping header select the course mapping you want to remove, then click the Remove button.

Note: The following information may be useful to users that are considering the removal of a course mapping:

- If you are using child courses within Blackboard Learn, only the parent course will be shown in the dropdown.
- If a course mapping is removed, student accounts that were synchronized from Blackboard Learn will remain in the kuraCloud course. These accounts may be deleted manually from within kuraCloud.
- Mapping may only be removed from active kuraCloud courses. If a kuraCloud course is deleted it must first be restored before the mapping can be removed. This kuraCloud course may safely be deleted again when the mapping is removed.
Workflows

The following section outlines standard workflows, however a more detailed guide with screenshots may be found in Appendix C. Course Administrator privileges are required synchronize students or grades.

Synchronization of Students from Blackboard.

Note: The email address for student accounts is not a mandatory field within Blackboard Learn, however it is required in order to create accounts within kuraCloud. Please ensure that this has been addressed before you proceed.

Within Blackboard Learn navigate to your course’s Home Page to synchronize students to kuraCloud:

- From Course Management expand the Course Tools menu.
- Select kuraCloud - Sync Students

CARE REQUIRED: Be sure to carefully review the detailed summary that is provided to ensure you are happy with the outcome of this synchronization. The following important points should be considered:

1. Students that exist in your kuraCloud course but not in Blackboard Learn will be deleted from kuraCloud.
2. If more than one student shares the same email in Blackboard Learn, neither will be synchronized to kuraCloud.
3. If a student’s email has changed in kuraCloud or Blackboard Learn following a previous synchronization, the student’s kuraCloud account will be deleted and a new invite will be sent to their new email address.
4. Only Blackboard Learn users with the institution role of ‘Student’ and the course role of ‘Student’ will be synchronized to kuraCloud. (These are default values within Blackboard Learn)

- When you have considered the above, click the Sync Students button to proceed.

Students that have been synchronized will be created within the mapped course in kuraCloud and be sent an invite email. If the kuraCloud course already contains students with a matching email address from Blackboard Learn their details will be updated and no invite email will be sent.

If you make changes to student’s details (including deleting students) within a mapped course you should resynchronize to ensure consistency across platforms.

If you have used child courses within Blackboard Learn, students within kuraCloud will be mapped as follows:

Blackboard Learn’s Course ID field → kuraCloud student’s Section field

Synchronization of Grades to Blackboard

This will synchronize all grades within a mapped course from kuraCloud to Blackboard Learn. By default, all grades that are added to Blackboard Learn will not be visible to students until Hide from Students (on/off) is toggled manually in the Grade Center.

Within Blackboard Learn navigate to your course’s Home Page to synchronize grades from kuraCloud:

- From Course Management expand the Grade Center menu.

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- Select Full Grade Center.
- From the Manage drop-down menu select kuraCloud - Sync Grades.
- Click Start to begin synchronization.

Grade synchronization can be an intensive process, so this can only be performed by one user at a time. Users will receive a message if they attempt to synchronize grades when a synchronization is already in progress, and should wait for 10 minutes before trying again.

**Editing and Deleting Courses**

Course mappings are resilient and will be remembered if the following occurs:

- A mapped kuraCloud course is deleted.
- A mapped Blackboard Learn course is deleted.
- A mapped Blackboard Learn course is changed from a standard course to a child course.

Restoring the deleted course on either platform will reinstate the functionality of the mapping so it can be used again.

Deleting a course within one platform will not delete the corresponding course within the other platform.
Support and Troubleshooting

Supported Blackboard Versions
The kuraCloud extension for Blackboard Learn will not function with Blackboard Learn version 9.1 Q4 2015 (9.1.201510.1171621) or earlier. This is due to the oldest available version of the kuraCloud.war extension using version 3000.1.0-rel.52 of the Blackboard libraries.

Connection Problems
Verify any connection issues by navigating to the Blackboard Learn Administrator Panel and select kuraCloud Sync from the Tools and Utilities menu.

Perform the following checks prior to requesting support:
- Ensure you can log-in to kuraCloud.com.
- Within kuraCloud, verify that LMS integration is enabled.

Resolving Issues
If you are experiencing problems with installing and/or using the kuraCloud Building Block please contact your Blackboard Learn administrator in the first instance. If you are using a SaaS product then you will need to contact your Blackboard support representative. This will allow them to check the Blackboard logs for issues, this can be done in a non-SaaS environment as follows:
- Navigate to the Blackboard Learn Administrator Panel.
- Select Logs from the Tools and Utilities menu.

The most useful log files for diagnosing issues are generally tomcat/stdout-stderr-[date].log and custom/kuracloud.log

If your Blackboard Learn administrator is unable to rectify the issue, please contact your ADInstruments representative and provide them with the following:
- A detailed description of your issue.
- The Blackboard Learn build version you have installed.
- Applicable screenshot(s) that illustrate the issue.

- A copy of any output from `tomcat/stdout-stderr-[date].log` (mentioned above) that appears relevant. Please do not send the entire log file as it may contain personally identifiable information (PII) from your students.

- A copy of the `custom/kuracloud.log` file (mentioned above).
Appendix A - Detailed Setup Guide

Please ensure you have contacted your ADInstruments representative to have LMS integration enabled for your kuraCloud instance.

Obtain a token

Generate a token within kuraCloud to enable communication with Blackboard Learn, then as a kuraCloud Administrator navigate to *Instance Administration.*
Select **LMS Integration** then **Configure LMS Integration**. Please note this menu will not be visible until LMS Integration is enabled for your kuraCloud Instance.

Select **Blackboard** from the drop-down menu then press the **Enable LMS Integration** button. Copy the provided token to a safe place. This is important because your token can be viewed **only once** in kuraCloud, losing this will require the generation of a completely new token.
Download the kuraCloud Building Block

Visit [https://www.adinstruments.com/support/lt#downloads](https://www.adinstruments.com/support/lt#downloads) to download the Blackboard building block.

Download the version appropriate for your environment.

Install the kuraCloud Building Block

Navigate to the Blackboard Learn Administrator Panel to install the Building Block, then select Building Blocks from the Building Blocks menu:

Navigate to Installed Tools:
Select **Upload Building Blocks:**
Browse to your **kuraCloud.war** file. Click **Submit**:

Review the required Blackboard Learn privileges for kuraCloud integration, then click **Approve**:

Click **Return** when installation completes:
On the *Installed Tools* page, locate the kuraCloud Building Block and click its drop-down menu, select *Settings*:

Enter your token in provided field and click *Add*:

Verify the token has been accepted by checking your kuraCloud instance name and instance ID are now listed:
Appendix B - Detailed Configuration Guide

Create a Course Mapping

Check that the course(s) to be mapped exist in both kuraCloud and Blackboard Learn (identical names are not required):

Navigate to the Blackboard Learn Administrator Panel and select kuraCloud Sync from the Tools and Utilities menu:
Select the courses to be mapped from the provided drop-down menus, then click the Add button:

This new course mapping will appear at the top of the page:

The course mapping can be verified in kuraCloud by navigating to the Student Accounts menu within the course, it will read 'Blackboard Connected':

**Note:** When mapping is complete you will no longer be able to edit the students from within that kuraCloud course.
Enable Synchronization for a single Course Mapping

Within Blackboard Learn navigate to your course’s Home Page. From Course Management expand the Customization menu and select Tool Availability:

On the Tool Availability locate kuraCloud Grade Sync and kuraCloud Student Sync. Check the appropriate boxes in the available column for each that you wish to enable. When you have finished click the Submit button:

The kuraCloud Student Sync option will now be available in the Course Tools menu.

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Enable Synchronization for all Course Mappings

Navigate to the Blackboard Learn Administrator Panel, then select Course Settings from the Courses menu:

Select Course Tools from the Course Settings page:

Locate the kuraCloud Grade Sync and kuraCloud Student Sync entries. Toggle the appropriate switches in the Availability column:
For each entry, review the Scope of Change column choose how you will apply these changes to new and existing courses, then click the Submit button:

Note: If you are using child courses within Blackboard Learn, only the parent course will be shown in the dropdown.

Removing a Course Mapping
Navigate to the Blackboard Learn Administrator Panel, then select kuraCloud Sync from the Tools and Utilities menu:
Under the *Remove a Course Mapping* header select the course mapping you want to remove, then click the *Remove* button:

![Course Mapping Screen](image_url)

**Note:** The following information may be useful to users that are considering the removal of a course mapping:

- If you are using child courses within Blackboard Learn, only the parent course will be shown in the dropdown.
- If a course mapping is removed, student accounts that were synchronized from Blackboard Learn will remain in the kuraCloud course. These accounts may be deleted manually from within kuraCloud.
- Mapping may only be removed from active kuraCloud courses. If a kuraCloud course is deleted it must first be restored before the mapping can be removed. This kuraCloud course may safely be deleted again when the mapping is removed.
Appendix C - Detailed Workflows Guide

Synchronization of Students from Blackboard.

Ensure all student accounts within Blackboard Learn have an email address:

Within Blackboard Learn navigate to your course’s Home Page. From Course Management expand the Course Tools menu and select kuraCloud - Sync Students:

**CARE REQUIRED:** Be sure to carefully review the detailed summary that is provided to ensure you are happy with the outcome of this synchronization. Students that exist in your kuraCloud course but not in Blackboard Learn will be deleted from kuraCloud.
Click the Sync Students button to proceed:

Students that have been synchronized will be created within the mapped course in kuraCloud and be sent an invite email.

If you have used child courses within Blackboard Learn, students within kuraCloud will be mapped as follows:

Blackboard Learn’s Course ID field → kuraCloud student’s Section field

Synchronization of Grades to Blackboard

Within Blackboard Learn navigate to your course’s Home Page. From Course Management expand the Grade Center menu and select Full Grade Center.

From the Manage drop-down menu select kuraCloud - Sync Grades.

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Grade synchronization can be an intensive process, so this can only be performed by one user at a time. Users will receive a message if they attempt to synchronize grades when a synchronization is already in progress, and should wait for 10 minutes before trying again.

**Editing and Deleting Courses**

Course mappings are resilient and will be remembered if the following occurs:

- A mapped kuraCloud course is deleted.
- A mapped Blackboard Learn course is deleted.
- A mapped Blackboard Learn course is changed from a standard course to a child course.

Restoring the deleted course on either platform will reinstate the functionality of the mapping so it can be used again.

Deleting a course within one platform will not delete the corresponding course within the other platform.

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Appendix D - Technical Details

The kuraCloud.war building block has dependencies on blackboard libraries: https://community.blackboard.com/docs/DOC-1147.

This building block is using the blackboard libraries from: https://bbprepo.blackboard.com/content/repositories/releases/

Library dependencies are as follows:

- bb-taglibs
- bb-platform

Bundled inside this building block are the following libraries:

- bb-ws-context
- bb-ws-course
- bb-ws-coursemembership
- bb-ws-user
- bb-ws-gradebook