1. Installation Overview

1 Overview of Installation

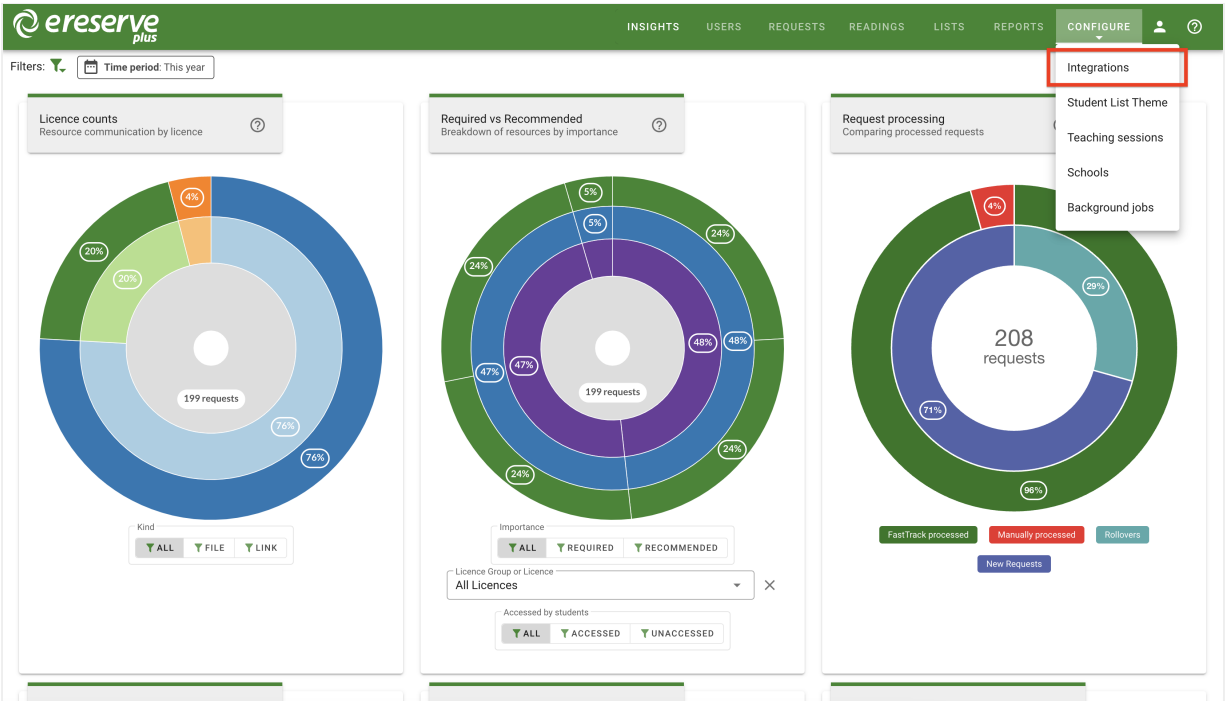
Installation of the eReserve Plus LTI Tool starts in the eReserve Plus Configuration console. Following are the steps necessary to complete the installation.

1.1 Integration Record Creation

Creation of new integration records is done within the eReserve Plus Admin interface. You will need access to this interface to complete this step of the setup. If you do not have access then please contact the eReserve Support Team.

Each integration record contains the details for authentication (a key and a secret) and, once activated it will contain details of the LMS Instance once it has been activated.

Login to eReserve then navigate to Configure > Integrations.



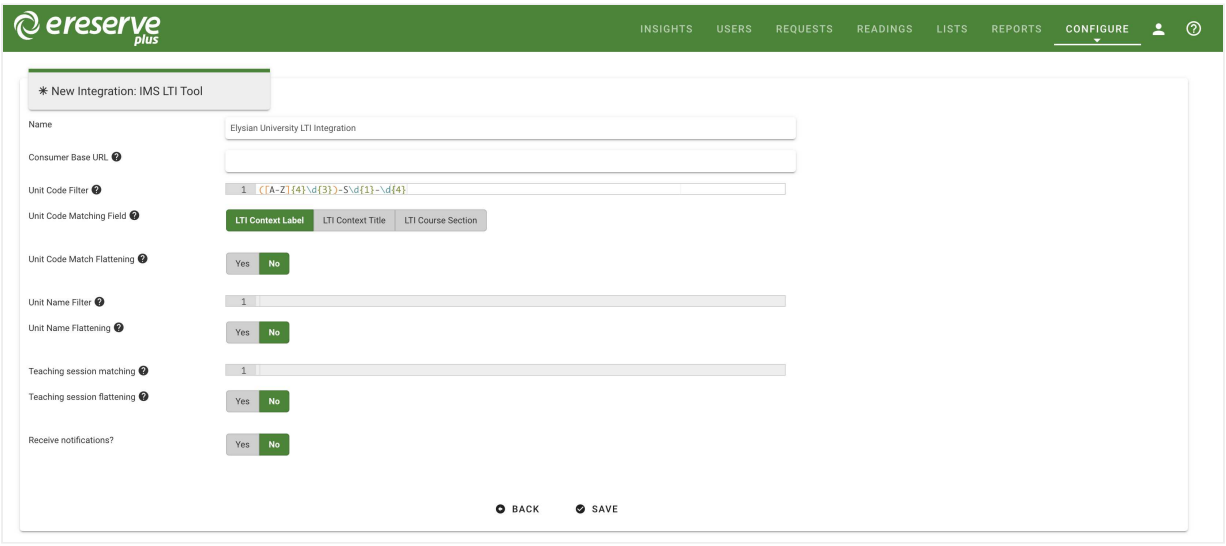
configure-integrations

Once you have navigated to Integrations, you will see the interface pictured below.

(blank intergration screenshot needs to be added or wording above needs to be adjusted)

To start the creation process click on the New integrations for dropdown button then select IMS LTI Tool.

You'll then be presented with the form below. All you need to do is enter a name for your integration then click on the Save button. You'll notice that a key and secret have been automatically created for you. Take note of these, we'll be using them when we head over to your LMS to do the next step.



completed-ims-lti-tool

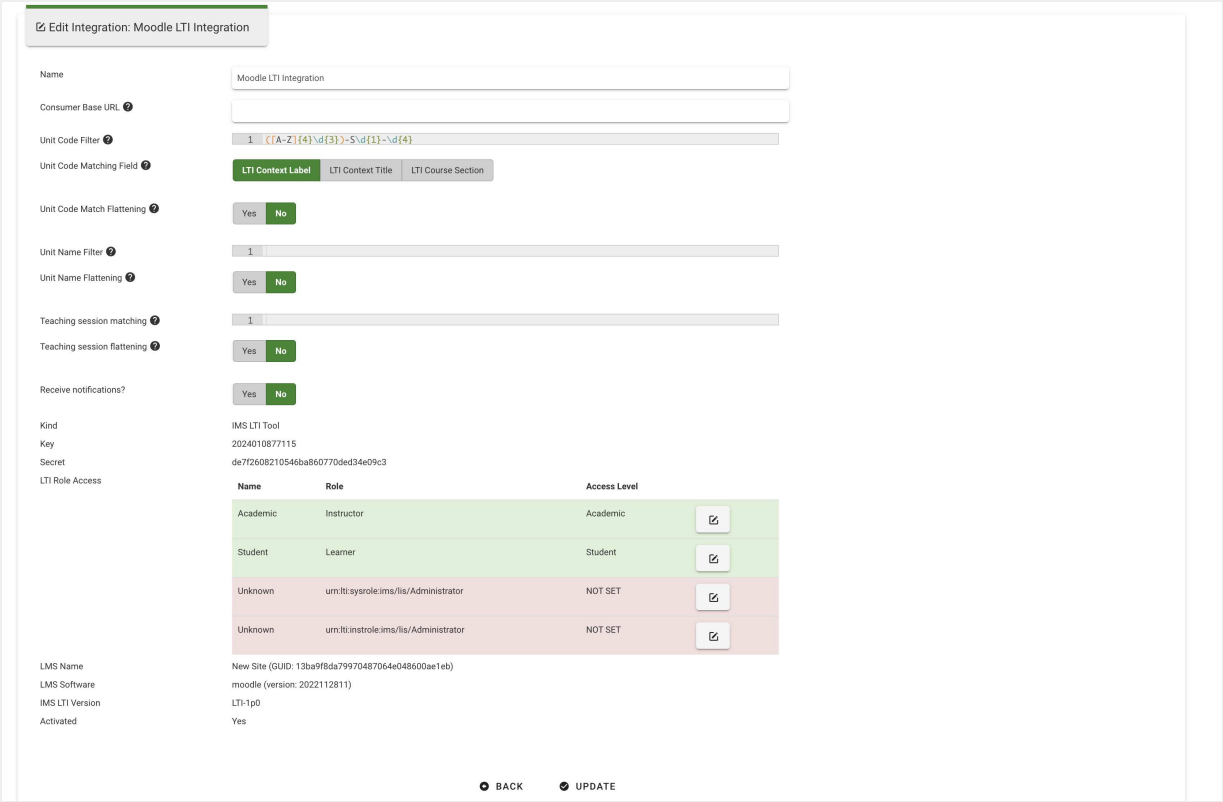
At this point it’s important to note that each instance of your LMS will need its own integration record created in eReserve. So if you have 3 instances of your LMS you’ll have 3 integration records in eReserve. Once an integration record has been activated it can only be used with the LMS instance that it was activated from. So using those credentials for another LMS Instance will fail.

1.2 Installation in your LMS

Each LMS that supports IMS LTI 1.1+ has its own specific installation requirements. With this in mind we've created instructions for each LMS that we support. These can be found in section 3 of this document onwards.

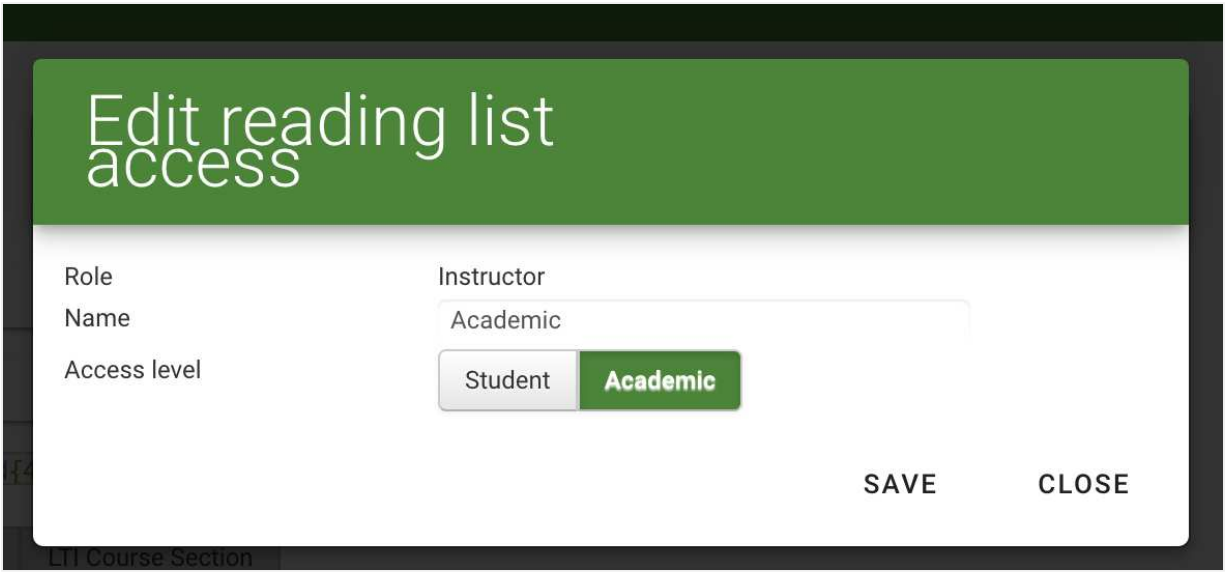
1.3 Reading list access management

Every user from your LMS has a role as defined in the LTI standard (see LTI Role Vocabularies). The role is passed to eReserve Plus at the time a user accesses their Reading List in eReserve Plus. Subsequently this role is then used to dictate what features the user has access to in the reading list. Currently there are two access levels defined in eReserve Plus: Student and Academic. The Student role provides read only access to the Reading List where as the Academic access provides a fully featured reading list management interface. You can manage this access simply by editing your LTI Integration record once it has been activated through the eReserve Plus Integration Management. Once you've started editing your LTI integration, you will see a LTI Role Access console to manage like the image below.



moodle-lti-integration

You'll note the list of LTI roles with their associated access level. Rows that are green have had their access level set and those that are red have not. To set or change the access level it's just a matter of clicking on the edit button. Once clicked you'll see the form below.



edit-reading-list-access

Change the name as needed and select an appropriate access level then click on the save button and you're done. This will be updated immediately and end users will see the change.

The first time an LTI role attempts to access eReserve Plus, the role will be made available in red as per the screenshot above until the Role is mapped in eReserve Plus to a Student or Academic; at which time it which will become green (authorised). If there are Roles in your LTI which have not become available in eReserve then login using the LMS using the appropriate role and select the Reading List activity to initiate the first access of eReserve Plus.

1.4 Reading lists, course codes and course names

When displaying the Reading Lists eReserve Plus will use the course code from your LMS to know which Reading Lists to display. For a lot of Institutions the course code will change each time it is offered. For example, a course code for one offering may be CS101_S2_2014 and the next offering the course code may be CS101_S1_2015. There are commonalities, however they are unique to the offering of the course and will mean that eReserve Plus will not have any historical lists for the new code. This is solved in eReserve Plus through its course code filtering.

1.4.0 Course Code Prefix

In very special circumstances a prefix can be added to all course codes connecting from the integration. If utilised all course codes originating from the integration will have the prefix added and all course code filters will have to be setup based on the prefixed course code.

1.4.1 Course code filter

To map a newly created offering to a base code, eReserve Plus has a filtering mechanism that allows you to match the new offering to the base course code (e.g. CS101 in the example above). To set the filtering simply edit the associated integration record in the Intergration Management interface and complete the Course Code Filter field. To create a filter you will need to provide a Regular Expression. You can use tools like Rublar to test your regular expressions before applying them to your integration record.

NB: It's important that this course code filter is correct otherwise it will lead to incorrect display of Reading Lists. If you are not comfortable with creating a regular expression then please contact the eReserve support team.

1.4.2 Course code filter - Multiple Matching Groups

LTI1.3 integrations support additional flexibility in course code filters. The Multiple Matching Groups switch allows the supplied regular expression to match more than one part of the course code and course name.

1.4.3 Course code matching field

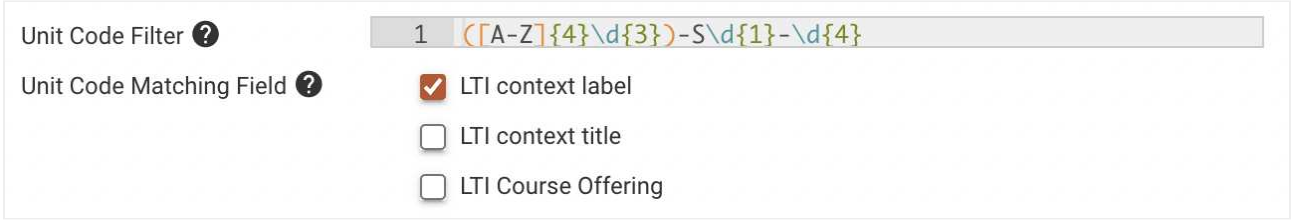
The majority of Learning Management Systems will send the Course Code via the LTI Context Label and the Course Description will be in the LTI Context Title. If the Base Code is only available within the Course Description this option sets which LTI field is processed by the Course Code Filter.

1.4.4 Course code matching field - Multiple Matching Fields

LTI1.3 integrations allow you to select which fields the course code filter is applied to, and can match on multiple fields. Check the boxes for each field that the Course Code Filter regular expression will be applied to.

The combined course code fields are joined together using ~~, before the regular expression is applied. e.g:

```
 LABEL~~TITLE
BMKG201~~Marketing
```



1.4.5 Course code match flattening

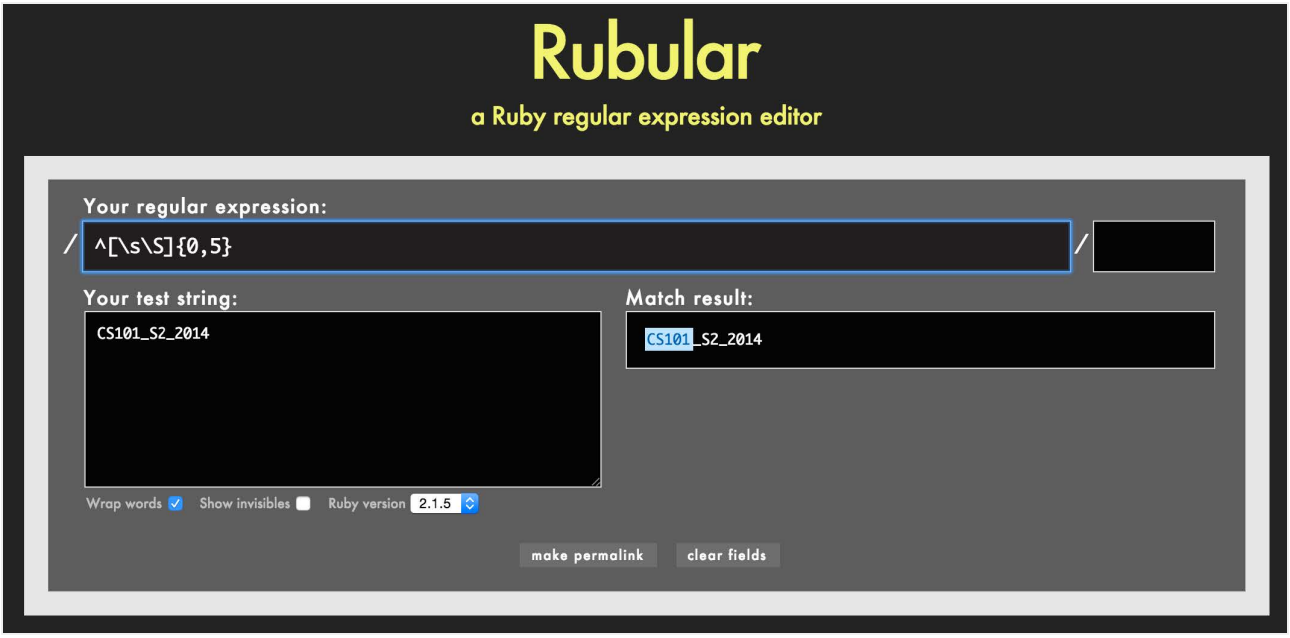
If set to yes all text captured by the regex is joined together in the resulting Base Code.

1.4.6 Example course code filter

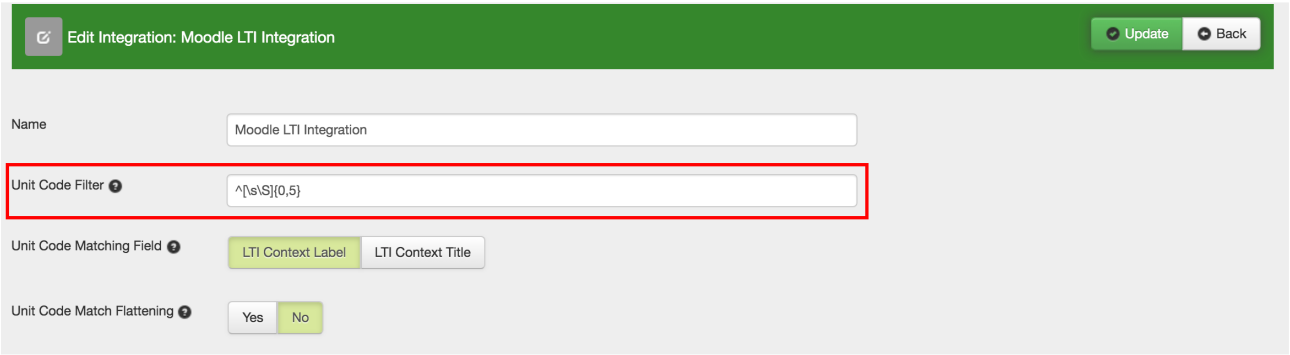
This example is based on a course code with the format below.

```
<base_code>_<teaching_period>_<year>
```

We'll be using the following course code samples for testing Rublar: CS101_S2_2-14 and CS101_S1_2015. Below is a test of the regular expression created for filtering.



As you can see our regular expression (i.e. ^[\s\S]{0,5}) has matched the base_code and we can now apply it to our integration record simply by entering it in the Course Code Filter field then saving the integration record. So every time the course is offered eReserve Plus will only look at the base_code when choosing a reading list to display.



1.4.7 Course name filter

The LTI Course Name Filter allows unnecessary detail and other content about the course to be removed from the course name displayed within eReserve Plus.

When utilised the LTI Course Name filter allows the display of course long names to be modified to fit the display requirements of the reading list within eReserve Plus. Long

course names can be modified to better fit the layout, course code and reading list display within the eReserve Plus interface.

1.4.8 Course name match flattening

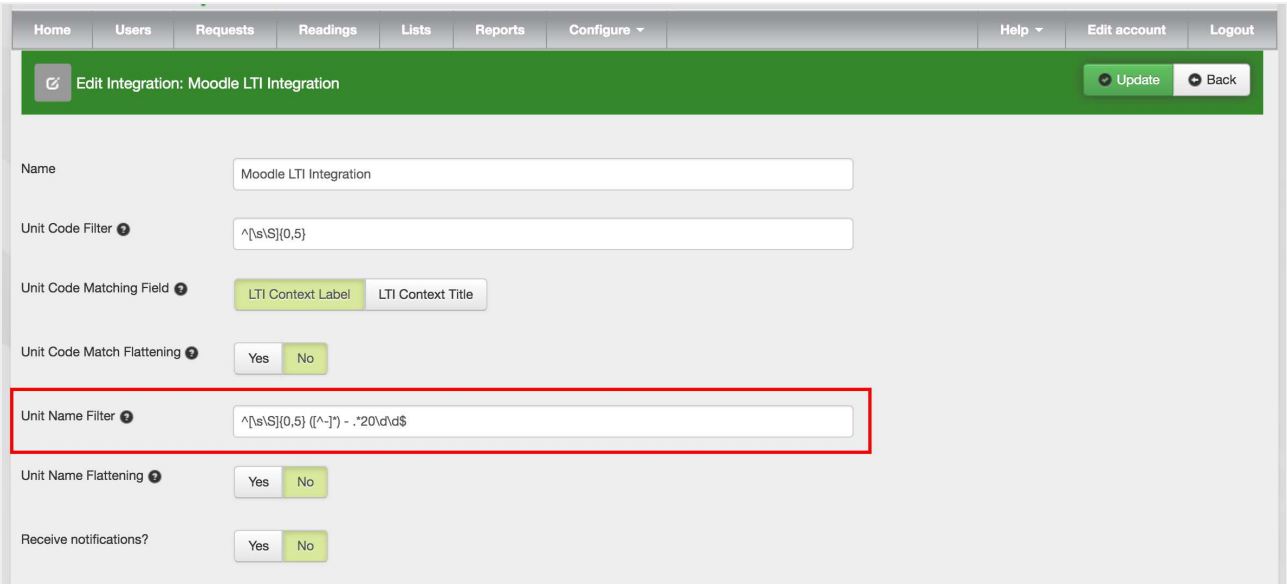
In the same manner as the Course Code Filter if set to yes all text captured by the regex is joined together in the resulting course name.

1.4.9 Example course name filter

The Course Name Filter can be designed to remove the Course Code and Time Period from the Course Name. The matched string for the Course Name would be Civil and Criminal Procedure.

```
^[\s\S]{0,5} ([^-]*) - .*20\d\d$
```

When eReserve receives the LTI handshake from the LMS, it will receive the string CS101 Introduction to Computational Theory - Semester One 2015, however it will only store and display Introduction to Computational Theory.



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5. CanvasLMS Integration

Throughout this section of the document there are details on getting your Canvas instance connected to eReserve Plus. It's very important to read all of the details in Installation and complete all of the activities in this section which will result in a successful connection to eReserve Plus. Should you have any questions then please contact the eReserve Support Team at support@ereserve.com.au

5.1 Requirements

The eReserve Plus LTI 1.3 Tool has been tested with the latest release of Canvas supported by Instructure. It is recommended that you use a supported version of Canvas however the eReserve Plus LTI Tool has been tested with earlier versions without incident.

5.2 Developer Key Creation

In this section, you will be required to create a Developer Key which will allow your instance of eReserve Plus to connect to Canvas using LTI 1.3.

To create a Developer Key, you will need to be logged in as an Administrator user of CanvasLMS instance and navigate to Admin > YourAccount > Developer Keys.

From there, select + Developer Keys and create a new + LTI Key.

Once selected, you will be presented with the LTI Developer Key creation form.

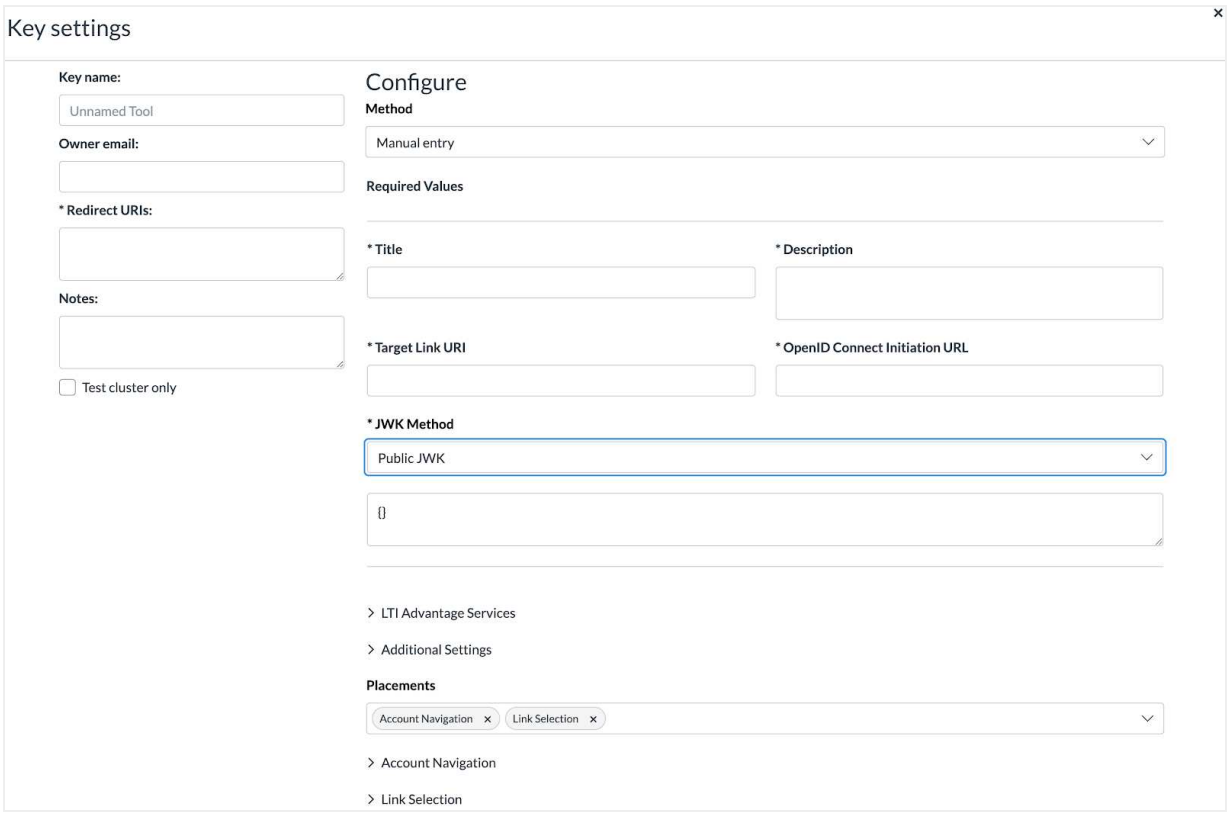

Figure 1: The LTI Key creation form

1. Key Name: This name is for you to identify this developer key in the list of developer keys. You can name it as you see fit.

2. Redirect URLS: You will need to provide the following URLs to allow CanvasLMS to redirect to during launches and to use the eReserve Plus Embedded Resources (Resource Linking) feature:

Production Redirect URL:

- https://[ereserve].institution.edu.au/app/integration/lti/reading_list/launch
  - (e.g https://ereserve.elysium.edu.au/app/integration/lti/reading_list/launch where "ereserve" is the Domain Name and "elysium" is the institution name)

Production Generate URL:

- https://[ereserve].institution.edu.au/app/integration/lti/resource_link/generate
  - (e.g https://ereserve.elysium.edu.au/app/integration/lti/resource_link/generate where "ereserve" is the Domain Name and "elysium" is the institution name)

Production Resource Link URL:

- https://[ereserve].institution.edu.au/app/integration/lti/resource_link
  - (e.g https://ereserve.elysium.edu.au/app/integration/lti/resource_link where "ereserve" is the Domain Name and "elysium" is the institution name)

Staging Redirect URL:

- https://[ereserve]-staging.institution.edu.au/app/integration/lti/reading_list/launch
  - (e.g https://ereserve-staging.elysium.edu.au/app/integration/lti/reading_list/launch where "ereserve-staging" is the Domain Name and "elysium" is the institution name)

Staging Generate URL:

- https://[ereserve]-staging.institution.edu.au/app/integration/lti/resource_link/generate
  - (e.g https://ereserve-staging.elysium.edu.au/app/integration/lti/resource_link/generate where “ereserve-staging” is the Domain Name and “elysium” is the institution name)

Staging Resource Link URL:

- https://[ereserve]-staging.institution.edu.au/app/integration/lti/resource_link
  - (e.g https://ereserve-staging.elysium.edu.au/app/integration/lti/resource_link where “ereserve-staging” is the Domain Name and “elysium” is the institution name)

3. Method: Choose the Manual method for creation of the developer key

4. Title: This is the name of the tool used in its placement (e.g. Course Navigation, Link Selection, etc). This will be visible to academics and students so choose an appropriate name to suit your internal vocabulary such as Reading List, Course Resources, etc

5. Description: A brief description about the LTI Tool (i.e. eReserve Plus)

6. Target Link URL: This is the general launch URL for this developer key. You will need to provide the following launch URL here:

Production Target Link URL:

- https://[ereserve].institution.edu.au/app/integration/lti/reading_list/launch
  - (e.g https://ereserve.elysium.edu.au/app/integration/lti/reading_list/launch where "ereserve" is the Domain Name and "elysium" is the institution name)

Staging Target Link URL:

- https://[ereserve]-staging.institution.edu.au/app/integration/lti/reading_list/launch
  - (e.g https://ereserve-staging.elysium.edu.au/app/integration/lti/reading_list/launch where "ereserve" is the Domain Name and "elysium" is the institution name)

7. OpenID Connect Initiation URL: As a part of the authentication process Canvas LMS will require the eReserve Plus OpenID URL which is as follows:

Production OpenID Connect Initiation URL:

- https://[ereserve].institution.edu.au/app/integration/lti/login
  - (e.g. https://ereserve.elysium.edu.au/app/integration/lti/login where "ereserve" is the Domain Name and "elysium" is the institution name)

Staging OpenID Connect Initiation URL:

- https://[ereserve]-staging.institution.edu.au/app/integration/lti/login
  - (e.g. https://ereserve-staging.elysium.edu.au/app/integration/lti/login where "ereserve" is the Domain Name and "elysium" is the institution name)

8. JWK Method: Choose the Public JWK as the method and complete the following sub-steps to obtain the JSON to enter. In another internet tab/window, visit the following URL:

Production JWK Method URL:

- https://[ereserve].institution.edu.au/app/integration/lti/public_jwk.json
  - (e.g. https://ereserve.elysium.edu.au/app/integration/lti/public_jwk.json where "ereserve" is the Domain Name and "elysium" is the institution name)

Staging JWK Method URL:

- https://[ereserve]-staging.institution.edu.au/app/integration/lti/public_jwk.json
  - (e.g. https://ereserve-staging.elysium.edu.au/app/integration/lti/public_jwk.json where "ereserve" is the Domain Name and "elysium" is the institution name)

Copy the resulting JSON displayed on the page and paste into the provided field for the JWK Method.

9. Additional Settings: In the Additional Settings, the Domain field will need to be populated with the domain of the eReserve Plus environment that you are currently using for your CanvasLMS along with the Privacy Level being set to Public in order for the Developer Key and App to function correctly

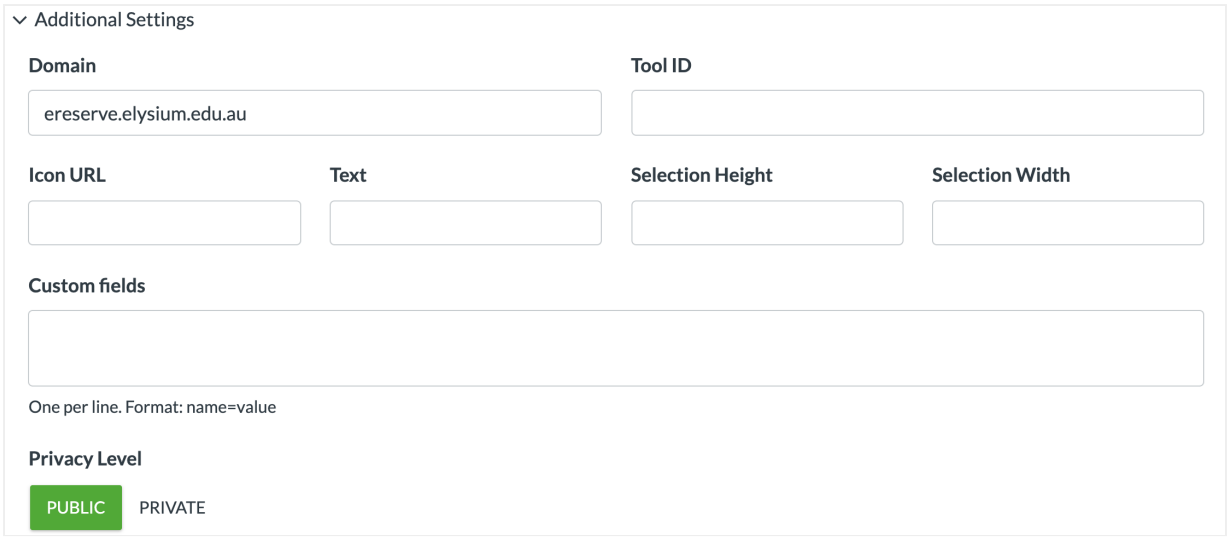

Figure 2: Additional Settings fields

Production Domain:

- [ereserve].institution.edu.au
    - (e.g ereserve.elysium.edu.au where “ereserve” is the Domain Name and “elysium” is the institution name)

Staging Domain:

- [ereserve]-staging.institution.edu.au
    - (e.g ereserve-staging.elysium.edu.au where “ereserve-staging” is the Domain Name and “elysium” is the institution name)

10. Placements: There are 3 placements which are required. Course Navigation, Account Navigation and Editor Button placements will allow the Developer Key to be visible to users.

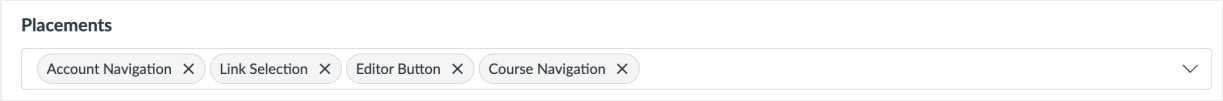

Figure 3: LTI Placements

An example of the above with the information filled out can be found below.

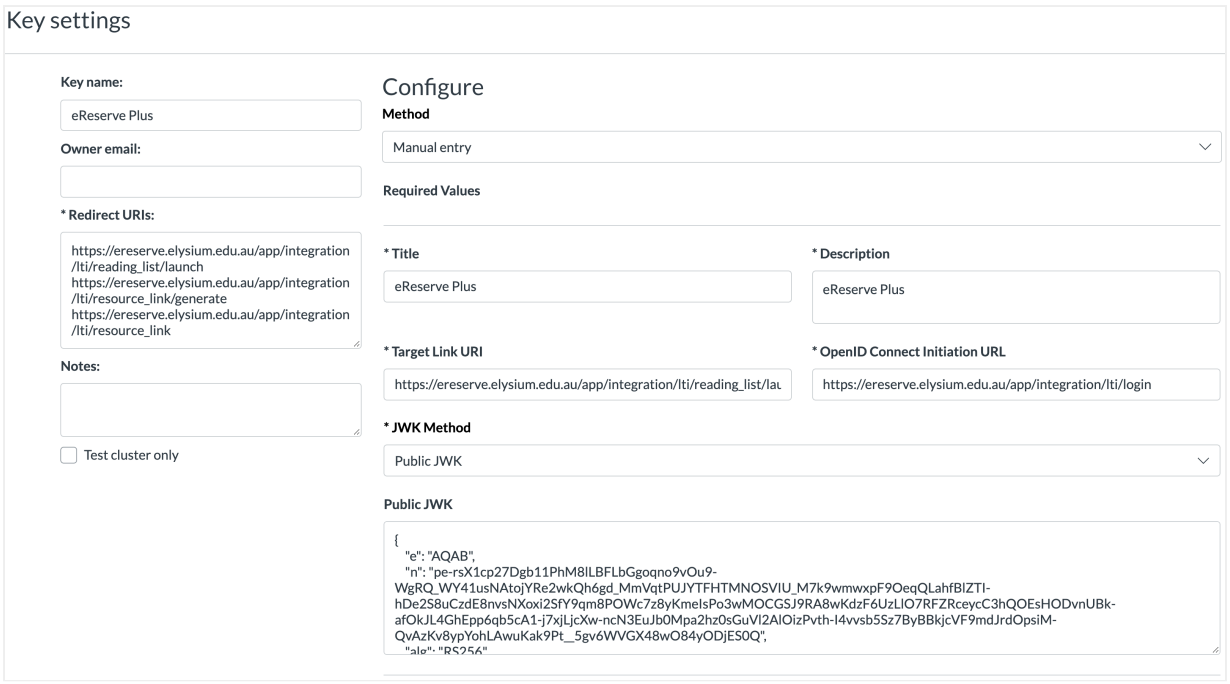

Figure 4: Resource Linking updated settings

11. Editor Button: In the Editor Button section, the Target Link URL and the Icon URL will need to be populated with the following URLs:

Production Target Link URL:

- https://[ereserve].institution.edu.au/app/integration/lti/resource_link/generate
  - (e.g https://ereserve.elysium.edu.au/app/integration/lti/resource_link/generate where "ereserve" is the Domain Name and "elysium" is the institution name)

Production Icon URL:

- https://[ereserve].institution.edu.au/app/assets/fav.png
  - (e.g https://ereserve.elysium.edu.au/app/assets/fav.png where "ereserve" is the Domain Name and "elysium" is the institution name)

Staging Target Link URL:

- https://[ereserve]-staging.institution.edu.au/app/integration/lti/resource_link/generate
    - (e.g https://ereserve-staging.elysium.edu.au/app/integration/lti/resource_link/generate where “ereserve-staging” is the Domain Name and “elysium” is the institution name)

Staging Icon URL:

- https://[ereserve]-staging.institution.edu.au/app/assets/fav.png
    - (e.g https://ereserve-staging.elysium.edu.au/app/assets/fav.png where “ereserve-staging” is the Domain Name and “elysium” is the institution name)

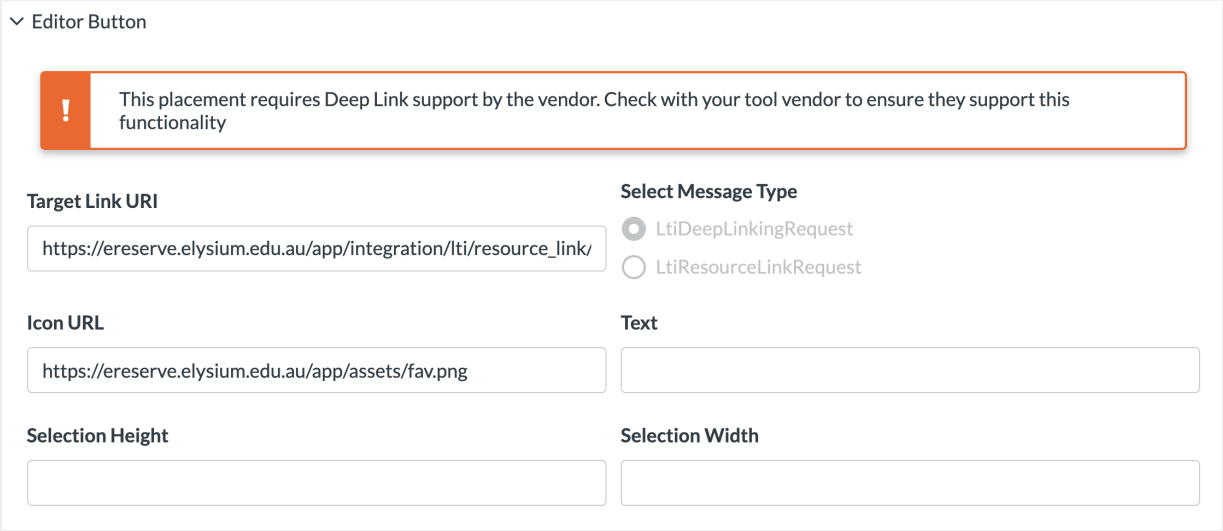

Figure 5: Editor Button

5.3 App Creation

Once the Developer Key has been created, you will need to install the Developer Key as an App. Below are the steps to follow to add the Client ID as an External Learning Tool.

1. Client ID:

The Client ID is the long number that is in the Developer Key record under the section Details (see image below with red box)

2. State:

Ensure that the new Developer Key has the State of On to allow for it to be created as an App.

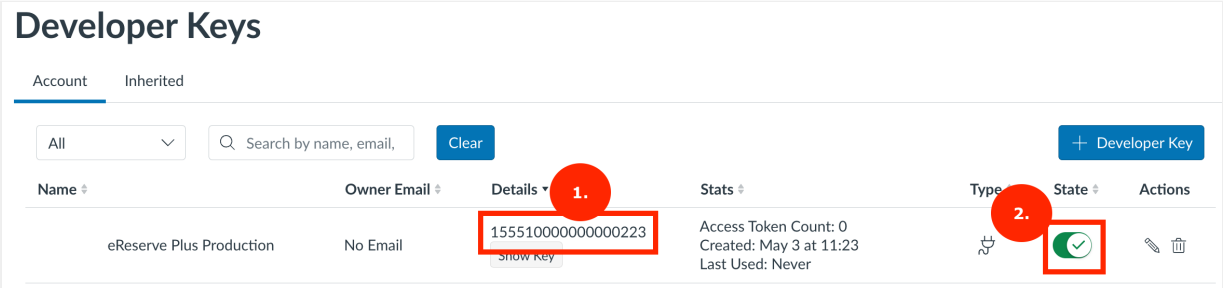

Figure 6: App creation details and State

3. App Configuration

Create the App by navigating to Settings > Apps > View App Configurations > + App

4. Configuration Type

The Configuration Type that should be selected is the By Client ID option where you will be asked to enter the Client ID from the Developer Key

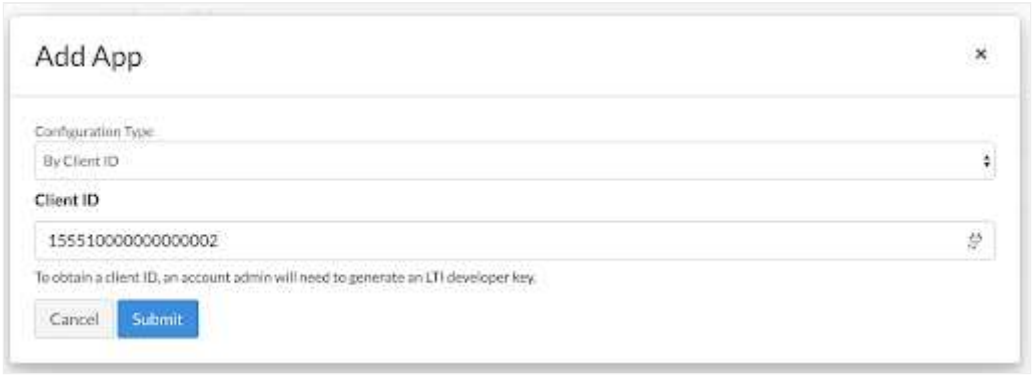

Figure 7: Add App

Once the above has been completed, you will have an install dialog box display where you can complete the installation of the App

When the Tool has been installed, the name of the External Learning Tool will be displayed on the left sidebar navigation of the Administration home page. From that link you can start the process of registering your Canvas LMS with eReserve Plus which can be found in the next section of this document.

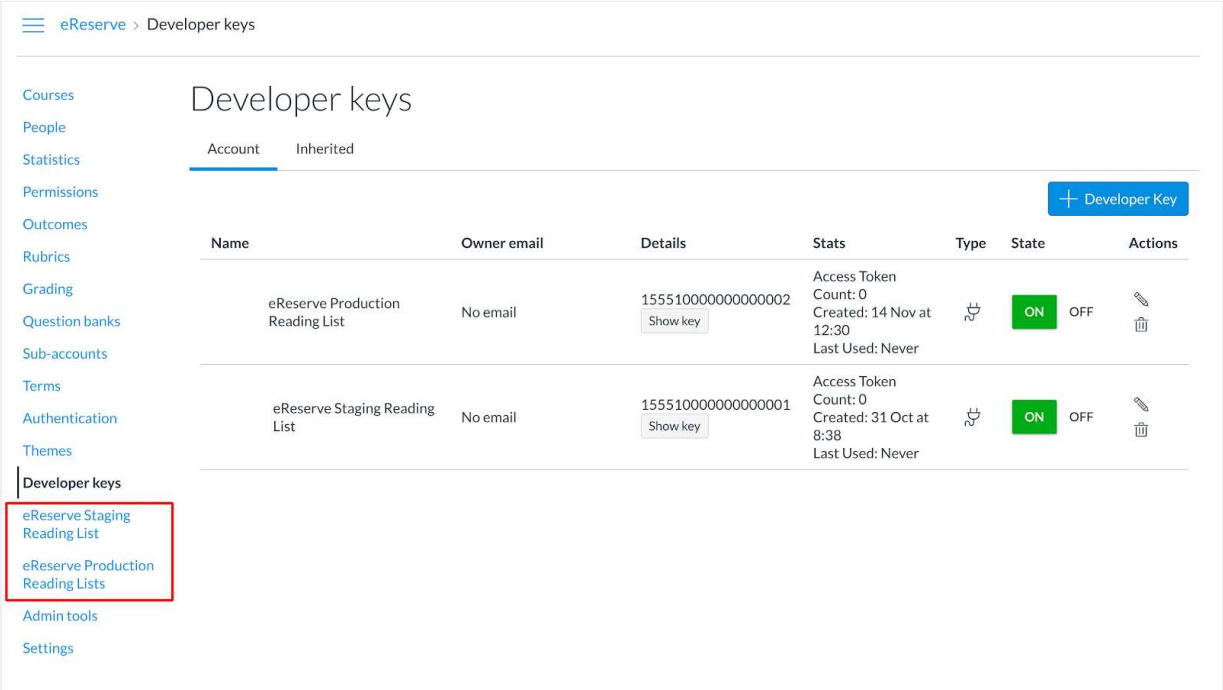

Figure 8: App Placements

5.4 Authorisation

Once the Developer Key has been created and setup, registration of your Canvas LMS with eReserve Plus can be completed by clicking on the Developer Key Title in the sidebar navigation of the Administration home page. This was entered in step 4 of the developer key creation.

> NB: You will need to be logged in as a Canvas LMS Administrator and also have an eReserve Plus account with the Role of Site Manager in your institution's eReserve Plus instance which matches your Canvas LMS instance (i.e. For

> Staging environment configuration, you will need to have an eReserve Plus account with the Site Manager Role in your eReserve Plus Staging instance to complete the registration).

The first message displayed is the IMS LTI Platform Authorisation which outlines that your platform has not been authorised to use eReserve Plus. In order to Authorise the platform, click Authorise and you will be taken to the Admin interface of eReserve Plus where you will need to have Site Manager role to complete the authorisation.

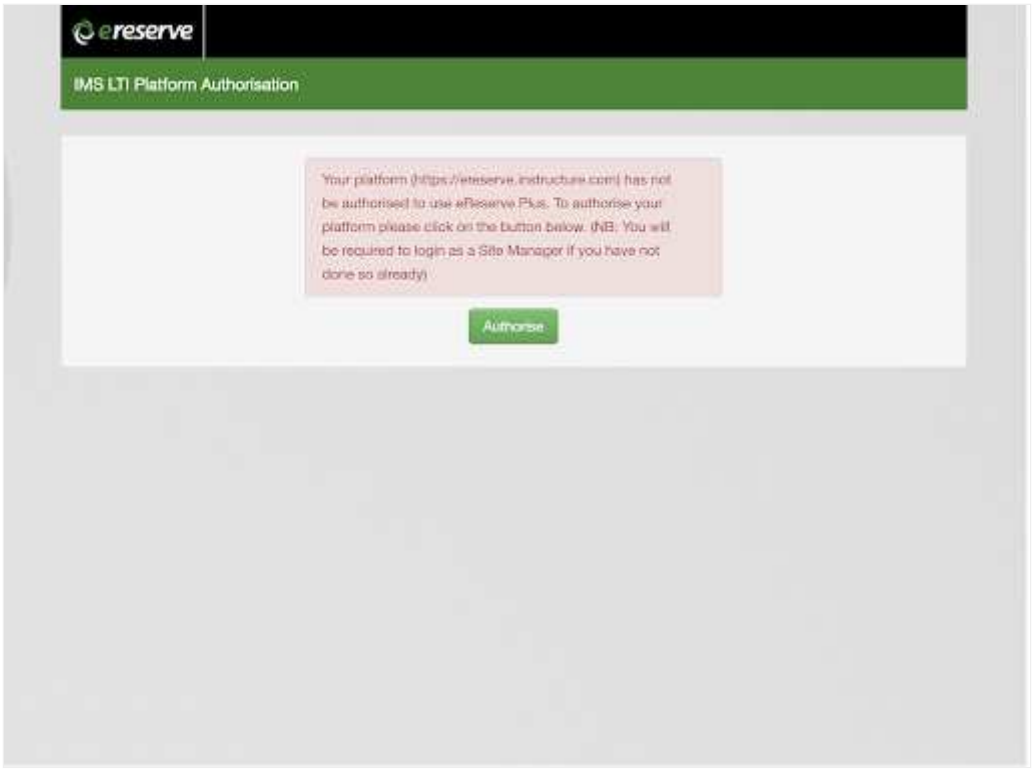

Figure 9: LMS LTI Platform Authorisation

On Authorisation you will see a notice appear at the top of the eReserve Plus Integration Management page. This notice will contain details of the success or failure to authorise your Canvas LMS to use your institution's eReserve Plus instance.

5.5 Activation

Once you have authorised the platform (i.e. your Canvas LMS instance), you will be asked to refresh your page and then complete the Activation of the Registration (see

below) for your platform so that users will be able to access eReserve Plus via the Canvas LMS instance. The on-screen details will display the LTI Client ID which should match that of the Developer Key ID.

Complete the form then click Activate to complete the process.

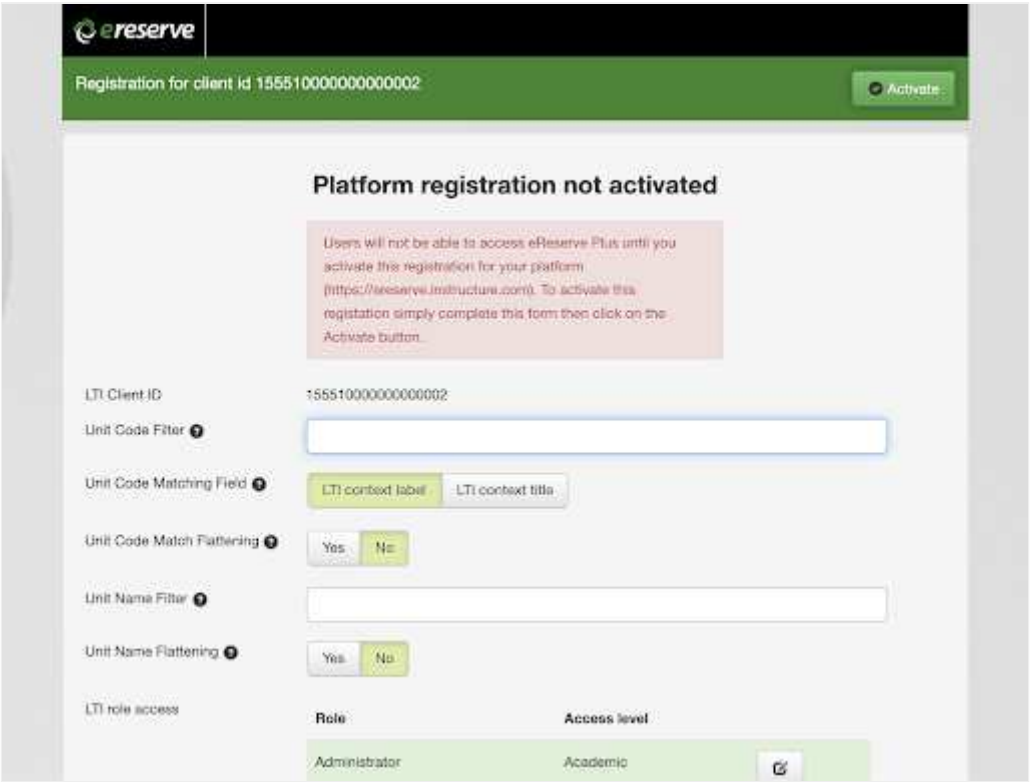

Figure 10: LTI Activation

It's important to note that at this stage the placements will appear in your Canvas LMS. So placement link "Course Navigation" will be visible for students and academics. Should they click on the link they will be presented with a page (see below) alerting them that eReserve Plus is yet to be activated.

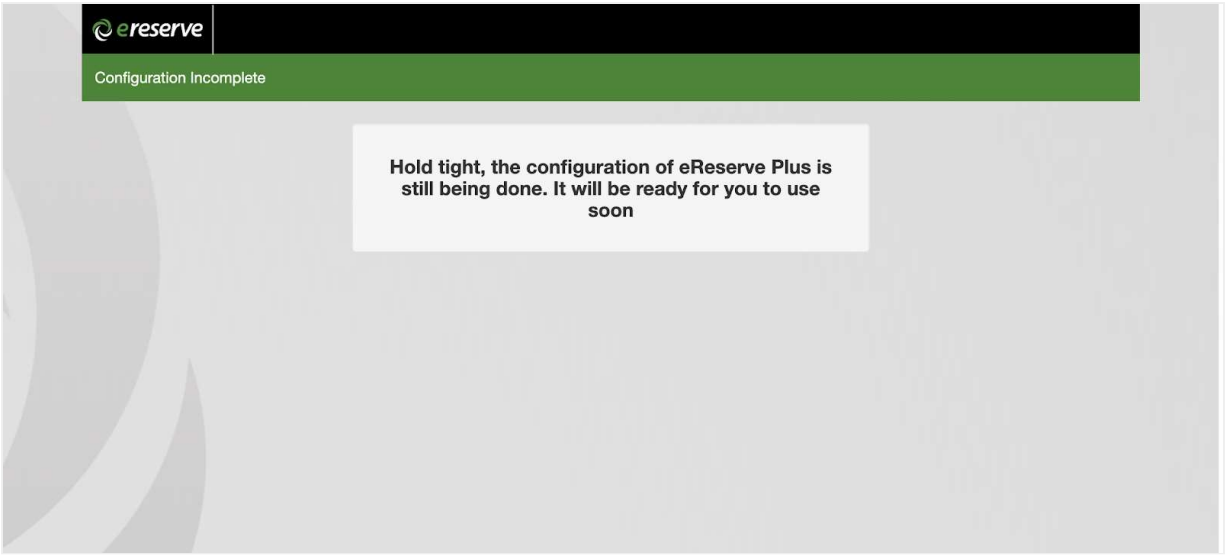

Figure 11: Unactivated Platform

5.6 Testing your Configuration

Once you have completed the activation, eReserve Plus will be accessible in the placements that you have chosen (see the Course Navigation placement example below). Each user accessing eReserve Plus through the placement will be presented with the appropriate eReserve Plus page depending on their Canvas LMS role.

![Testing Platform(canvas_lti1.3_testing_platform.png "Figure 12: Testing Platform")

5.7 Editing the Registration Form

To edit the Registration form or to change details such as the Course Code Filter or to change an LTI Role Access, you will be required to be logged in as a Canvas LMS Administrator.

From there you can navigate to Admin > YourAccount then click on the eReserve Plus Developer Key link. From there you can update the Registration form.

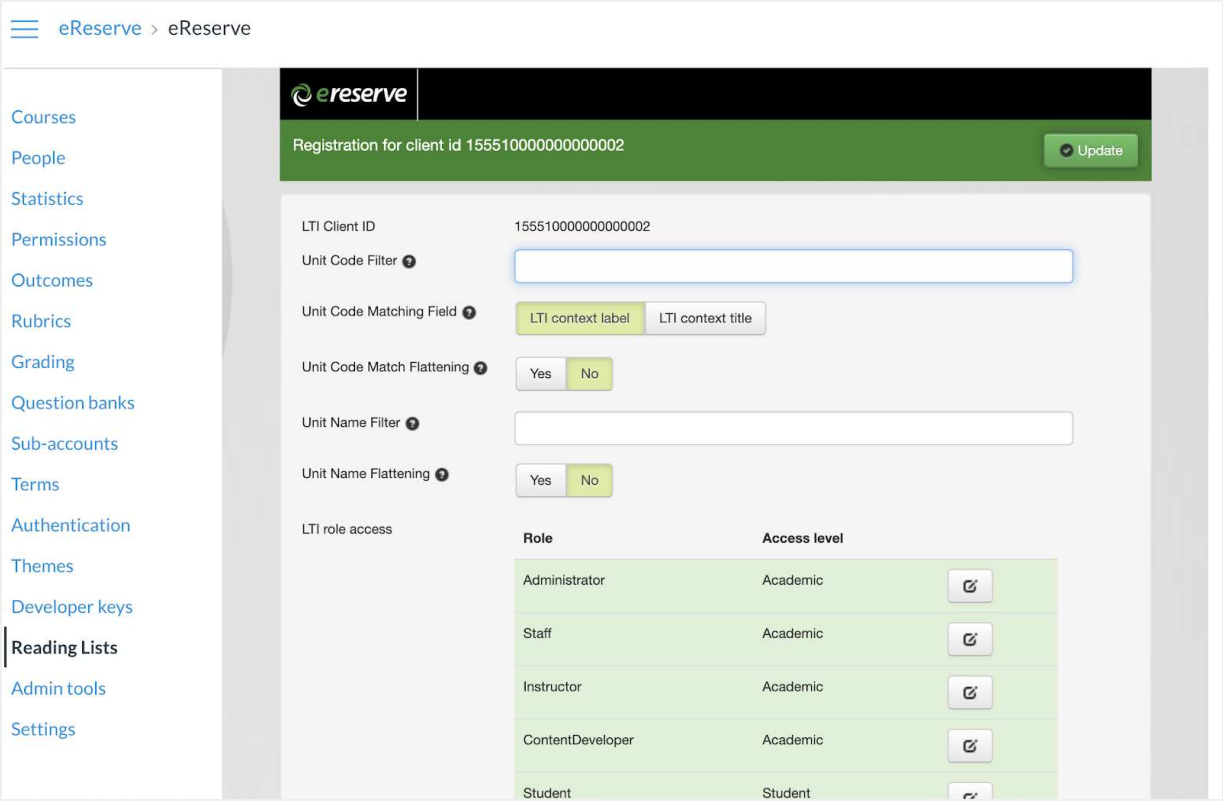

Figure 13: Editing Registration

This completes the configuration of Resource Linking with the CanvasLMS.

To learn more about eReserve Plus Resource Linking from a User perspective in the CanvasLMS, please visit our Embedded Resources with CanvasLMS.

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