Learning Management System (LMS) Integration Guide

For Systems Administrators

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Learning Management System Guide

1 Introduction

This document provides LMS Administrators with the necessary information to install and use the eReserve LTI Tool for those LMSs that support LTI V1. and above (e.g. Moodle, Desire2Learn, CanvasLMS, Blackboard, etc).

As part of the education industry and Learning Management System standard LTI1.3, and in order to show the degree of student engagement to academics and to identify at risk students and prevent them from dropping out, an institutions LMS using LTI 1.3 will pass eReserve Plus limited amounts of student data. The student data includes the following:

- First name
- Last name
- email address
- LMS ID (an ID that is assigned to that student user of the LMS)
- student ID.

All data is securely stored and is handled with care, secure data handling procedures and in compliance with legal requirements and best practice security mechanisms.

1.1 Prerequisites

Before the connection between the Learning Management System and eReserve Plus can be created, it is required that the LMS Admin has knowledge of the Domain Name that the institution has created. The Domain Name is a vital piece of information that is used to form part of the connection between the Learning Management System and eReserve Plus. If you do not know your Domain Name, please contact the eReserve Support Team.

1.2 Support

Should you require additional assistance please contact the eReserve Support Team on support@ereserve.com.au and a technical representative will contact you to assist.

2 Overview of Installation

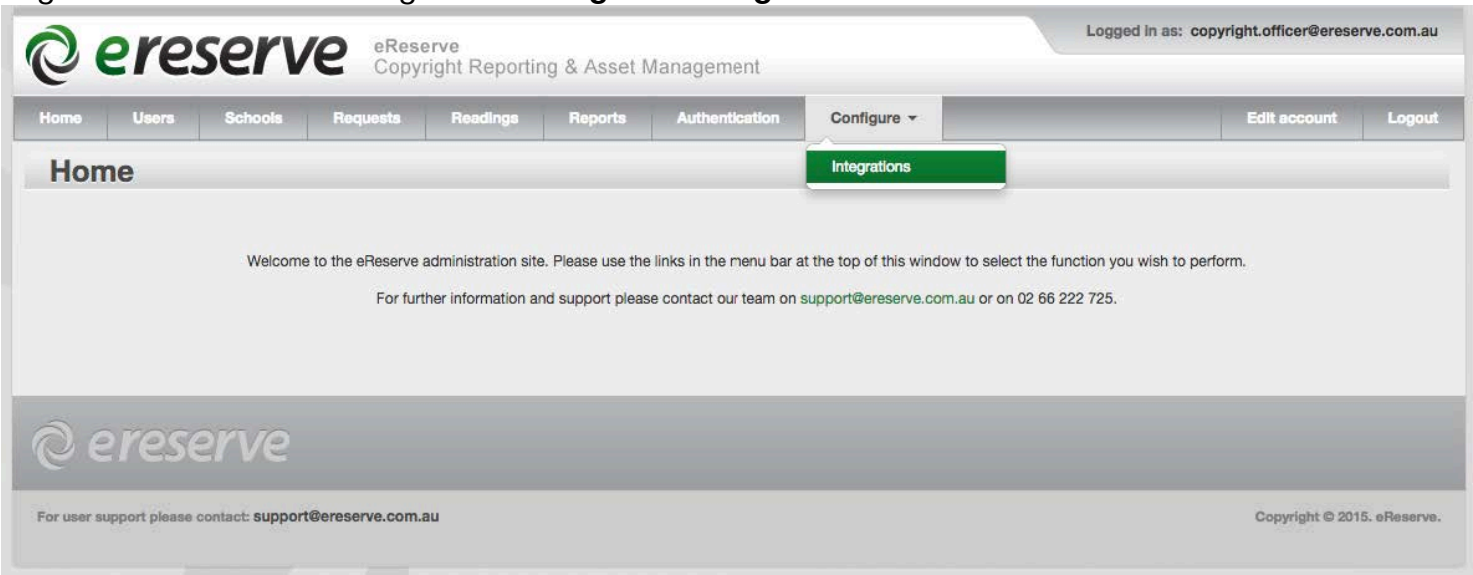
Installation of the eReserve Plus LTI Tool starts in the eReserve Plus Configuration console. Following are the steps necessary to complete the installation.

2.1 Integration Record Creation

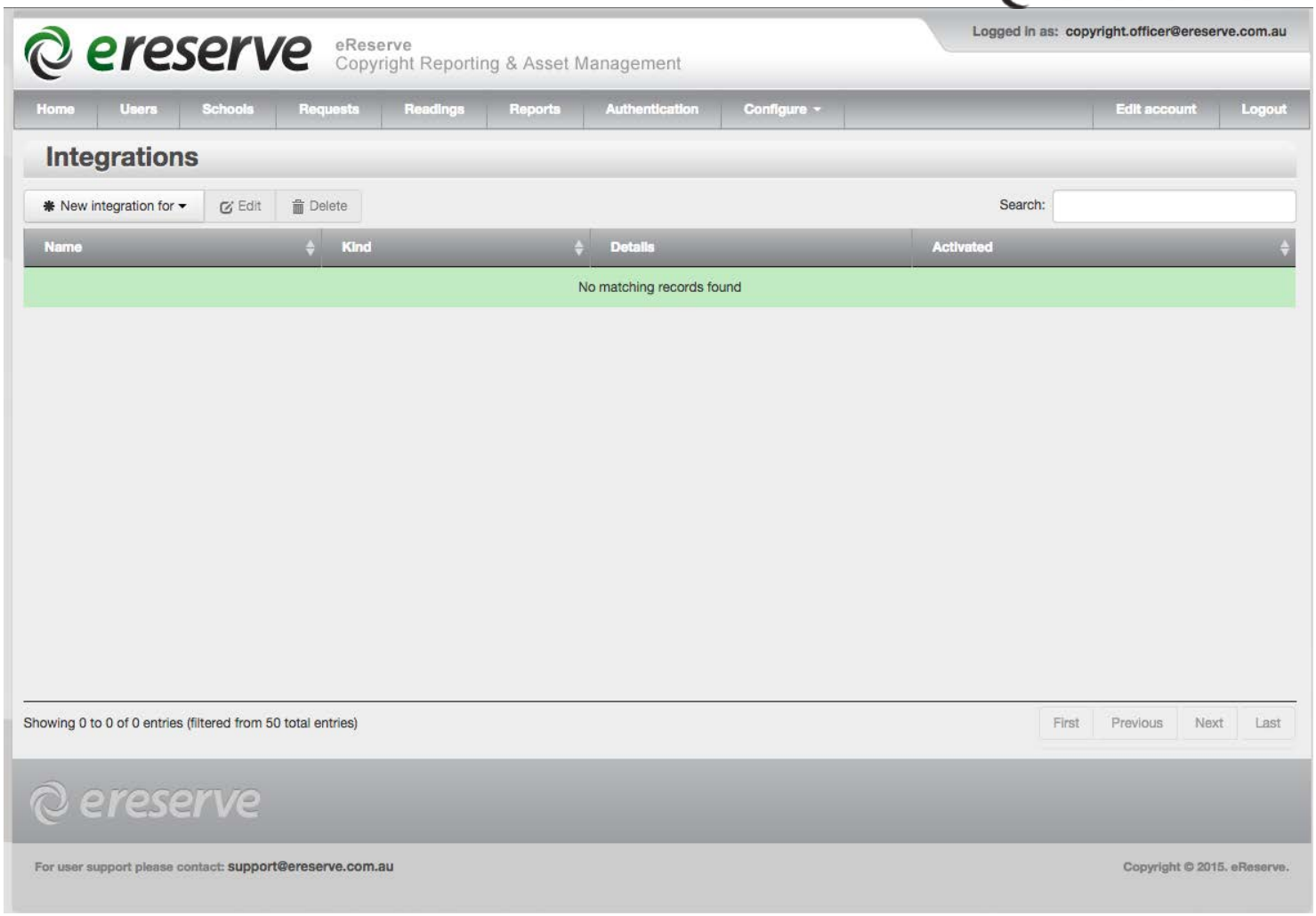
Creation of new integration records is done within the eReserve Plus Admin interface. You will need access to this interface to complete this step of the setup. If you do not have access then please contact the eReserve Support Team.

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.

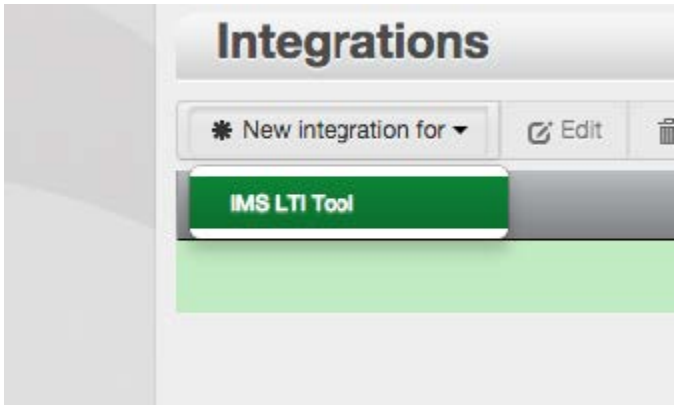
Login to eReserve then navigate to **Configure** > **Integrations**.



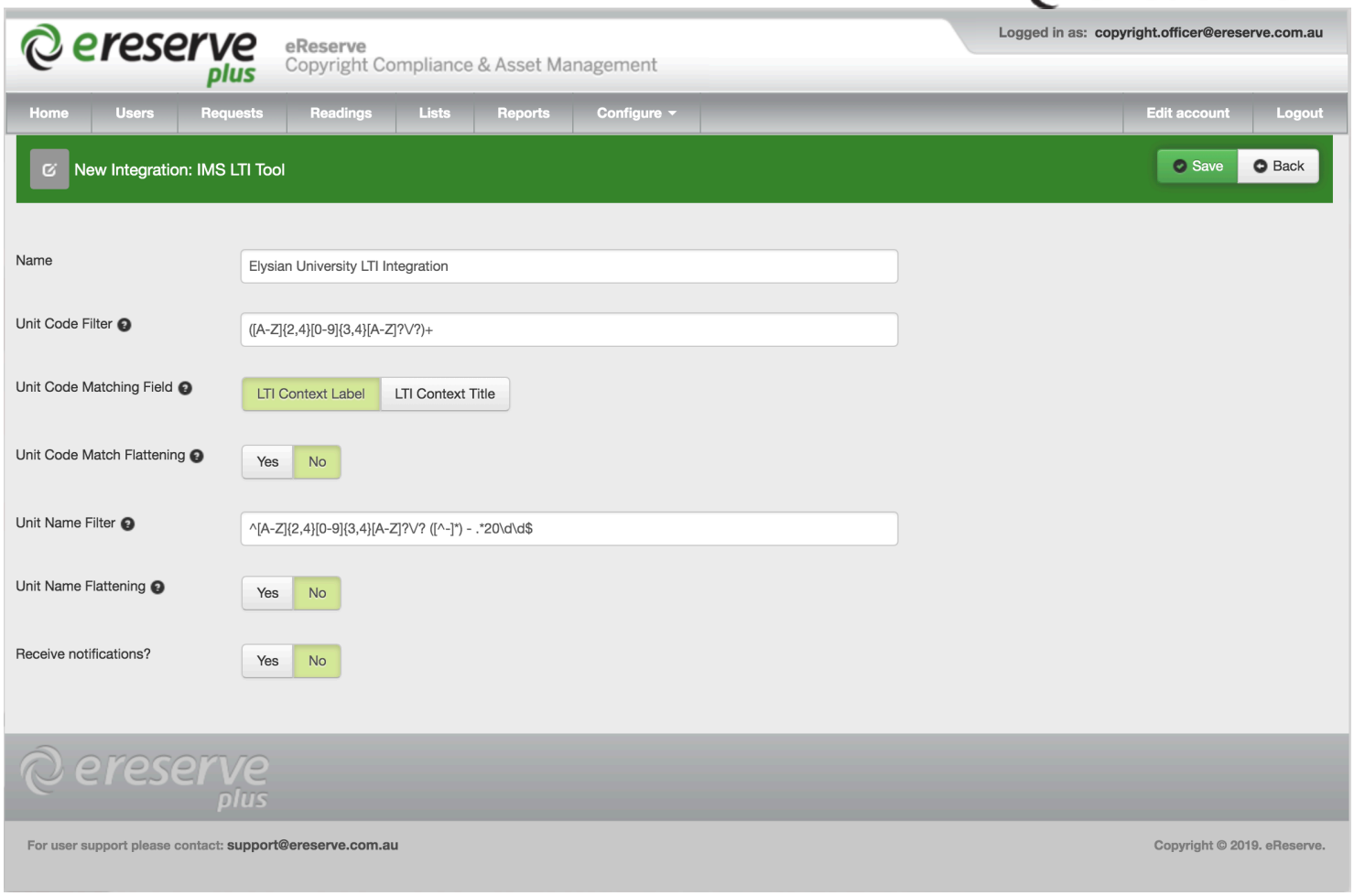
Once you have navigated to Integrations, you will see the interface pictured below.



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.



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.

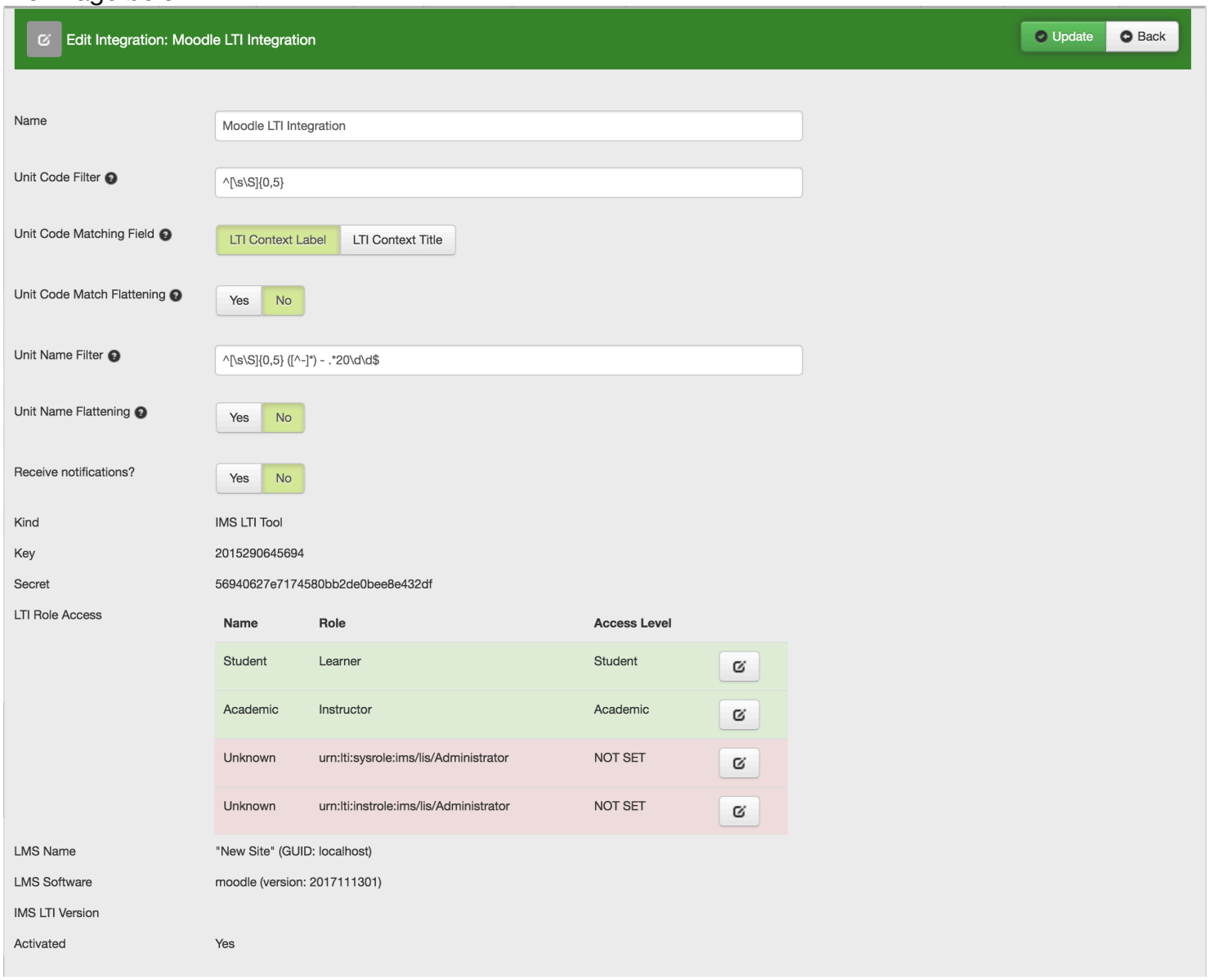
2.2 Installation in your LMS

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.

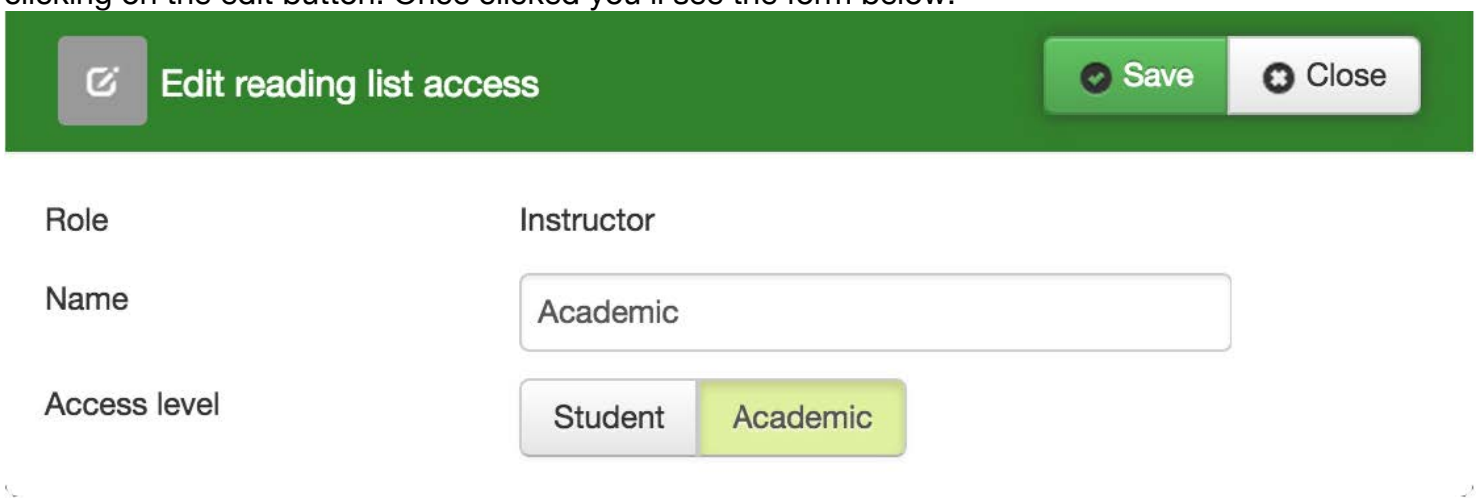
2.3 Reading list access management

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.



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.



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.

2.4 Reading lists, unit codes and unit names

When displaying the Reading Lists eReserve Plus will use the unit code from your LMS to know which Reading Lists to display. For a lot of Institutions the unit code will change each time it is offered. For example, a unit code for one offering may be CS101_S2_2014 and the next offering the unit 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 unit code filtering.

2.4.0 Unit Code Prefix

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

2.4.1 Unit 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 unit 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 **Unit 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 unit 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.

2.4.2 Unit code matching field

The majority of Learning Management Systems will send the Unit 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 Unit Code Filter.

2.4.3 Unit code match flattening

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

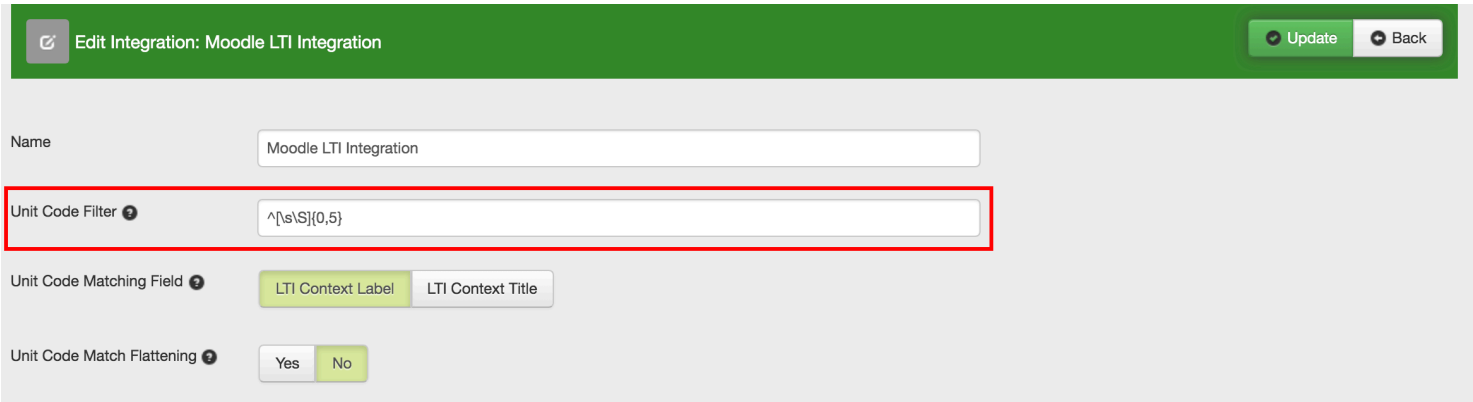
2.4.4 Example unit code filter

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

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

We'll be using the following unit 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 **Unit Code Filter** field then saving the integration record. So every time the unit is offered eReserve Plus will only look at the base_code when choosing a reading list to display.



2.4.5 Unit name filter

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

When utilised the LTI Unit 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.

2.4.6 Unit name match flattening

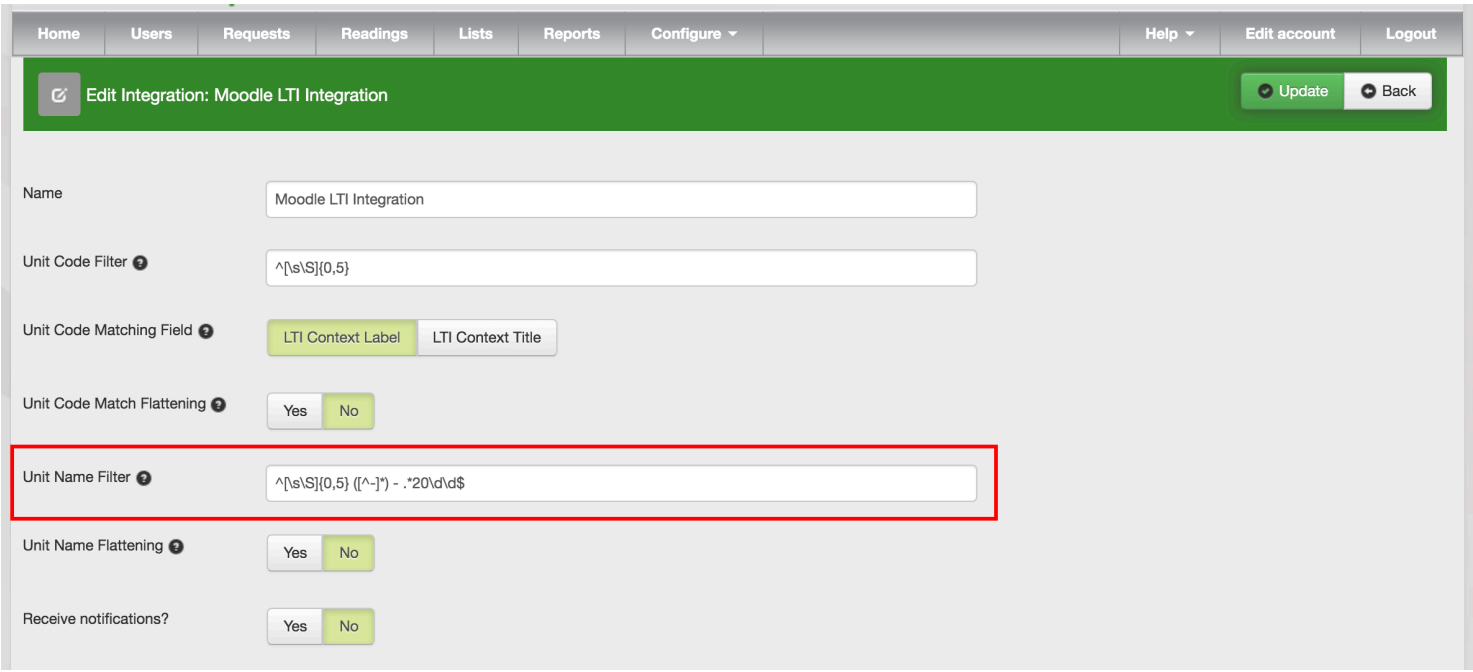
In the same manner as the Unit Code Filter if set to yes all text captured by the regex is joined together in the resulting course name.

2.4.7 Example unit name filter

The Unit Name Filter can be designed to remove the Course Code and Time Period which in eReserve Plus will be represented by the Unit Code and eReserve Plus reading list name. The matched string for the Unit 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**.



Blackboard LMS

Throughout this section of the document are the details on getting your Blackboard Learn instance connected to eReserve Plus using LTI 1.3 and using Resource Linking or Deep Linking. Should you have any questions then please contact the eReserve Support Team at support@ereserve.com.au

3.1 Requirements

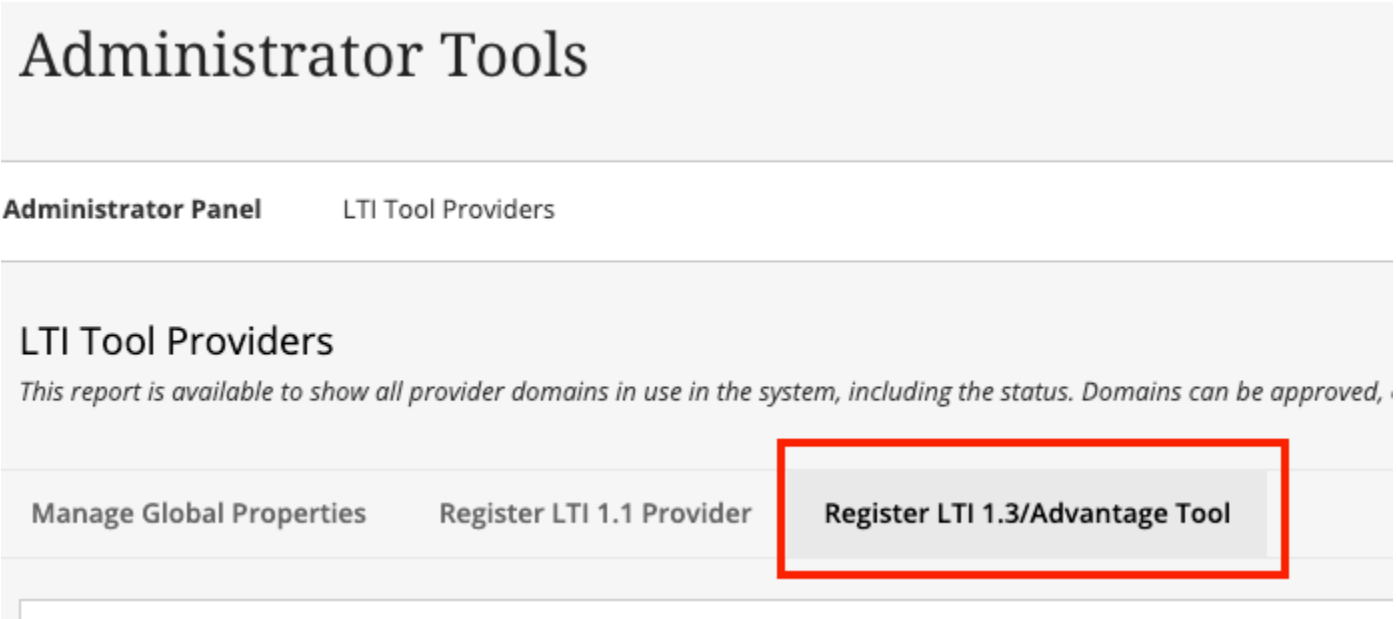
The eReserve Plus LTI Tool is regularly tested with the Blackboard Learn SaaS releases supported by Blackboard. It is important to note that we will only be testing against the Blackboard Learn SaaS.

It is also required that a ClientID has also been received from the eReserve Team. If you have not received the ID yet, please contact the eReserve Plus support team.

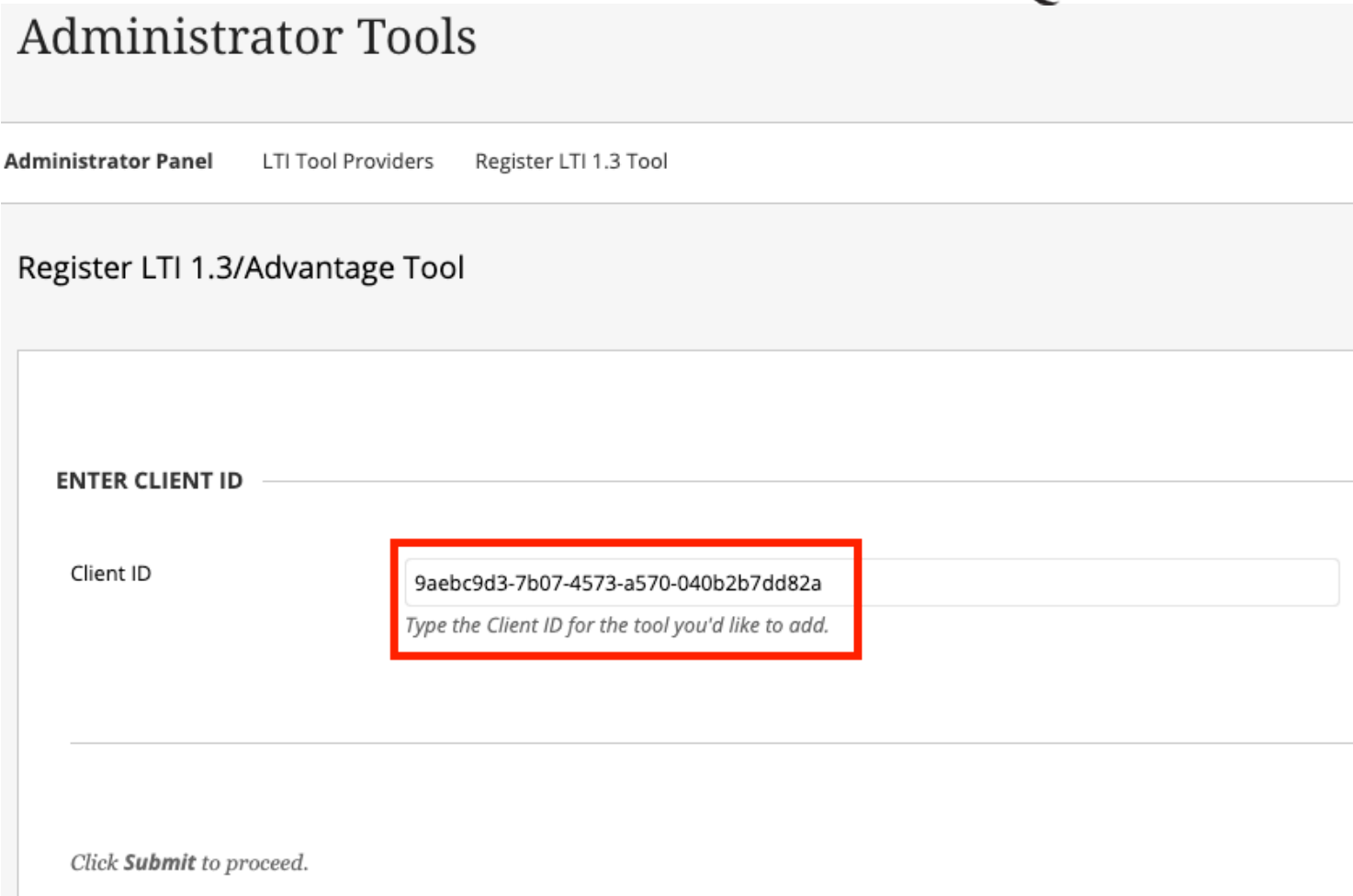
> Blackboard Learn can only have one LTI Tool per domain so if there is an LTI 1.1 Tool configured for eReserve Plus then that will be required to be deleted prior to configuring an LTI 1.3 Tool

3.2 LTI Tool Providers

In the Admin Panel for Blackboard, select *LTI Tool Providers* under **Integrations**, then select *Register LTI 1.3/Advantage Tool*.



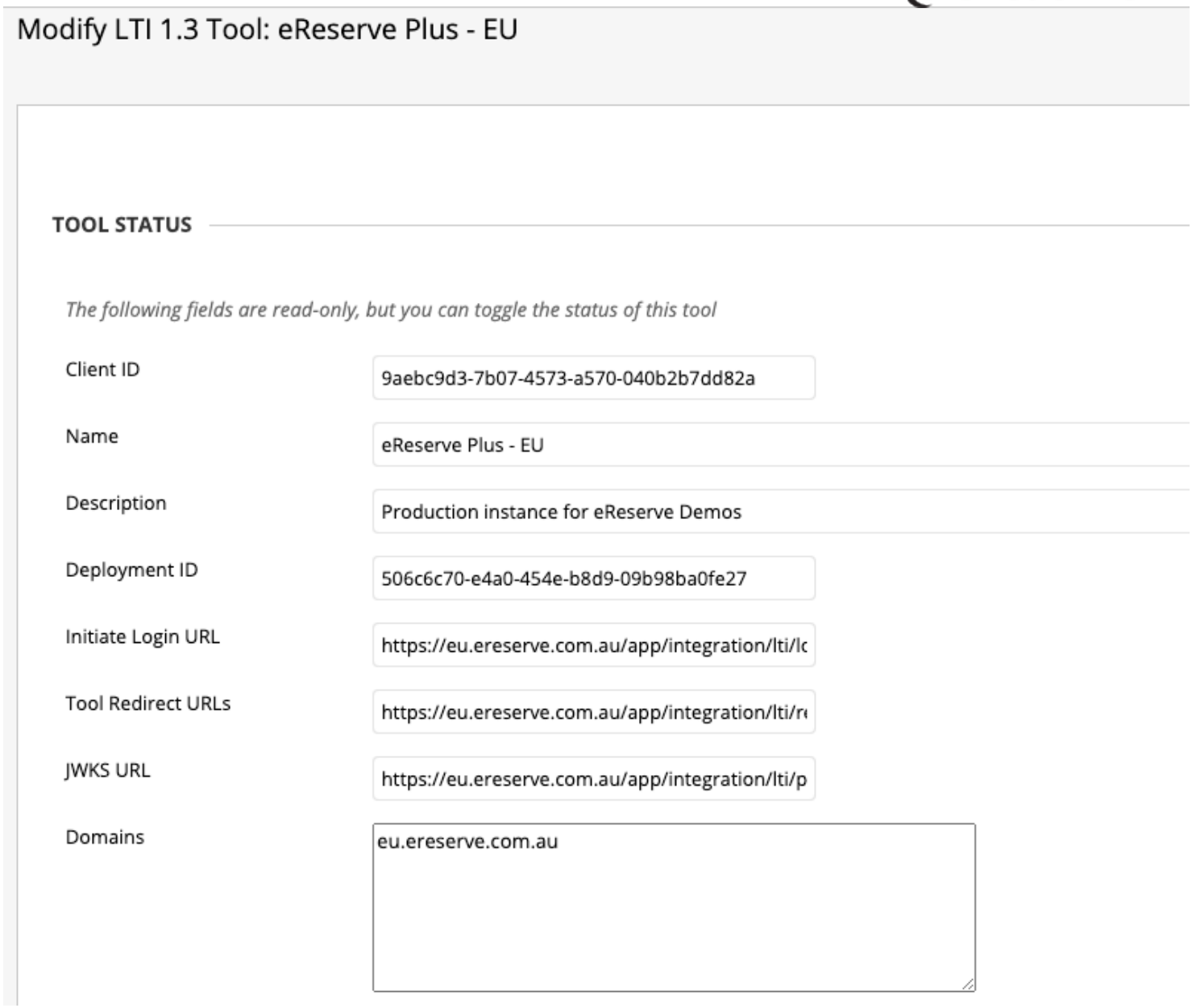
From there, you can enter in the ClientID that has been provided by the eReserve Team.



Once the LTI 1.3 Tool has been registered, it will create the tool along with automatically populate the following details:

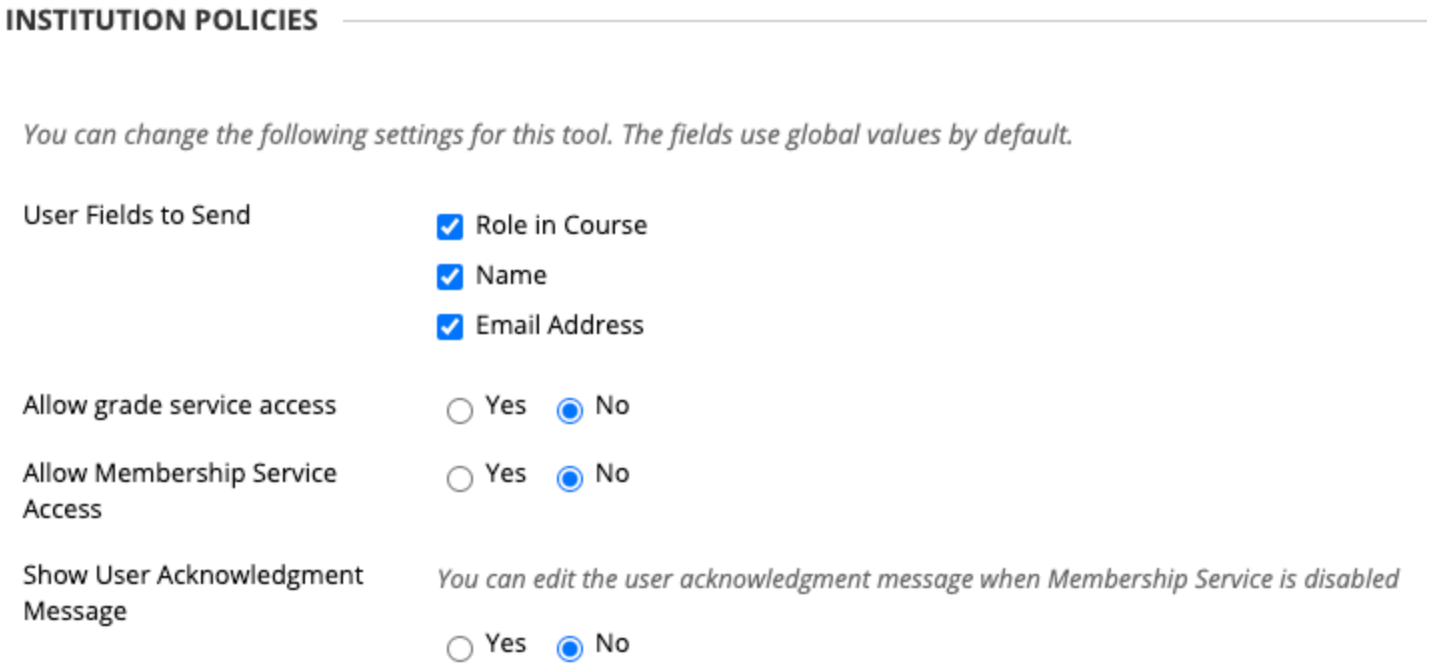
- Name
- Description
- Deployment ID
- Initiate Login URL
- Tool Redirect URLs
- JWKs URL

The Domain field is required to be populated with the domain of the eReserve Plus environment. i.e. example.ereserve.com.au.



The Tool Status will require to be set to Approved, by deafult this option is set to Excluded.

Under **Institution Policies**, all tick boxes for the *User Fields to Send*, will require to be *Enabled or ticked* and for the Service access will require to be set to *No* as per the following screenshot.



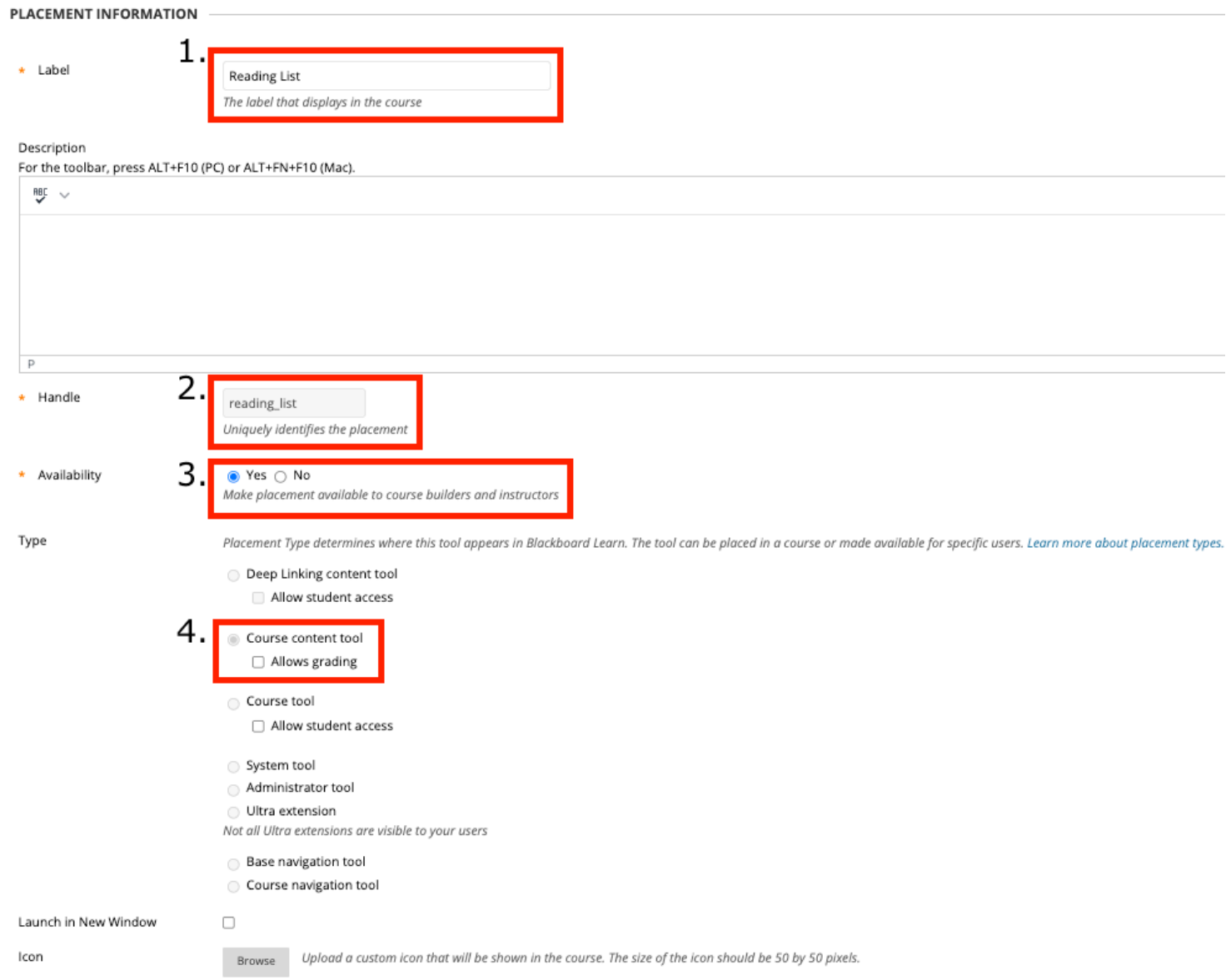
3.3 LTI Tool Placements

In order for course maintainers to link to a Reading List in eReserve Plus in their courses you will need to create placements for the Tool provider created in step 3.2. There will be three different placements required for the LTI 1.3 tool. The placements are *Course content tool*, *Administrator tool* and *Deep Linking content tool*. To create placements for an LTI Tool Provider, the dropdown option can be selected while hovering over an LTI Tool Provider, then *Management Placements* can be selected. Details for configuration can be found below:

Course Content Tool

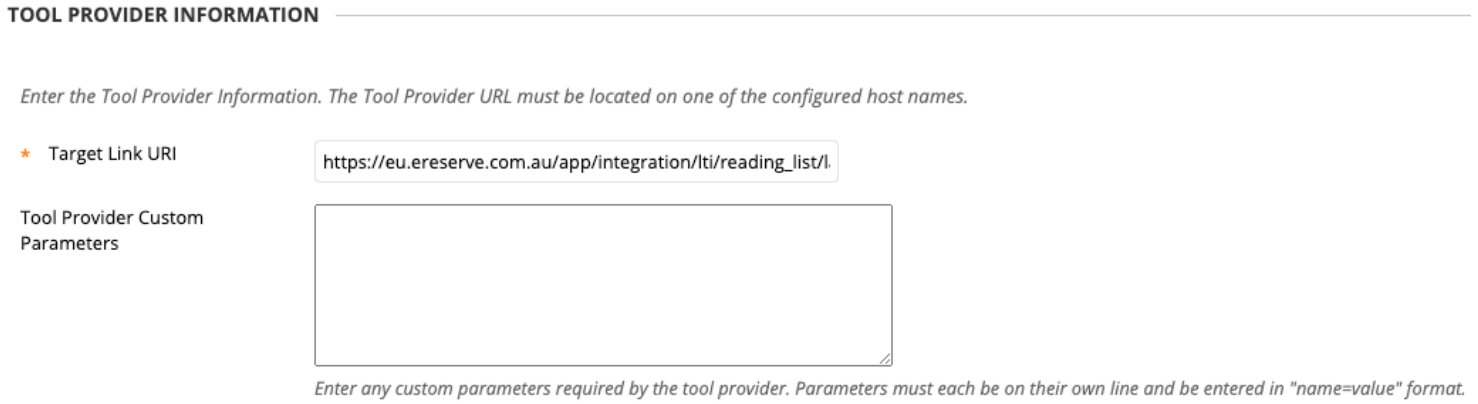
Below will be the required information for the creation of the *Course Content Tool* placement.

1. *Label:* The placement Label can be named anything you like to suit your institutional vocabulary however we recommend something that is relevant to the placement as this will be displayed in courses.
2. *Handle:* The placement Handle uniquely identifies the placement.
3. *Availability:* The placement Availability will determine whether the placement will be available or not - This should be set to **Yes**.
4. *Type:* The placement Type will need to be set to *Course Content Tool* with the *Allows Grading* option disabled.



The Tool Provider Information will require the *Target Link URI* to be populated. An example of that link can be found below:

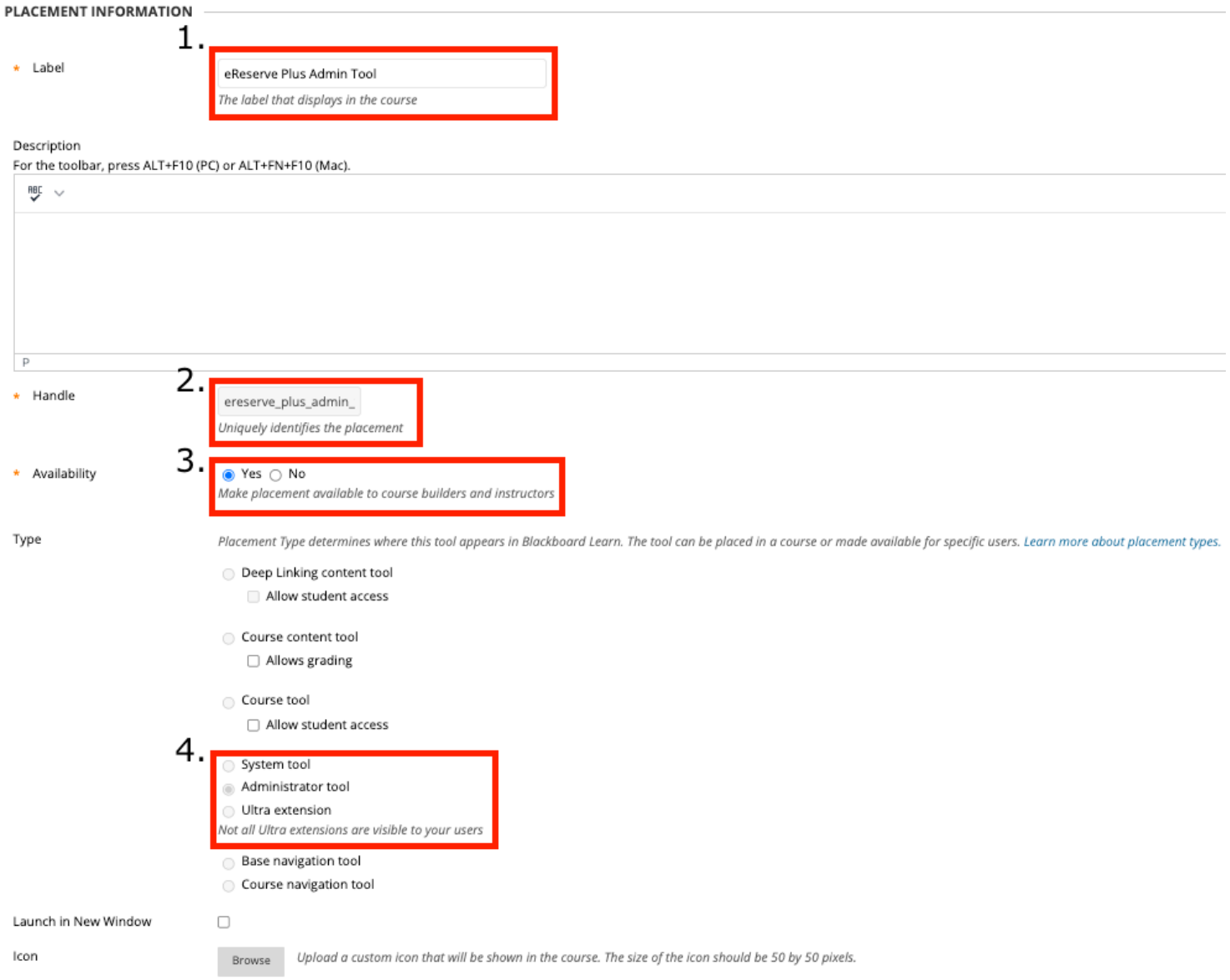
- https://example.ereserve.com.au/app/integration/lti/reading_list/launch where the *example.ereserve* would be your eReserve domain.



Administrator Tool

Below will be the required information for the creation of the *Administrator Tool* placement.

1. *Label:* The placement Label can be named anything you like to suit your institutional vocabulary however we recommend something that is relevant to the placement as this will be displayed under *Tools and Utilities* in the *Administrator Tools*.
2. *Handle:* The placement Handle uniquely identifies the placement.
3. *Availability:* The placement Availability will determine whether the placement will be available or not - This should be set to **Yes**.
4. *Type:* The placement Type will need to be set to *Administrator Tool*.



The Tool Provider Information will require the *Target Link URI* to be populated. An example of that link can be found below:

- https://example.ereserve.com.au/app/integration/lti/reading_list/launch where the *example.ereserve* would be your eReserve domain.

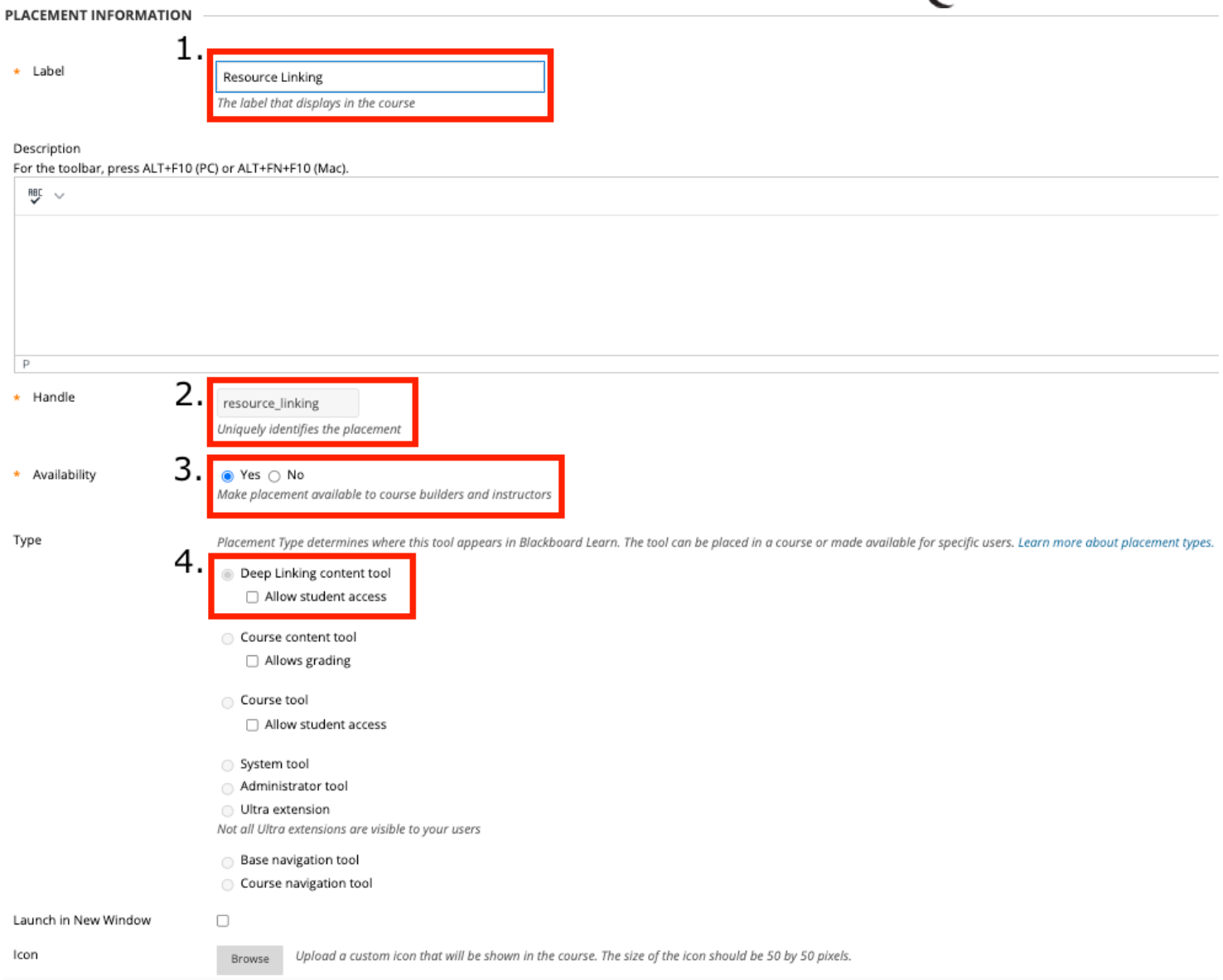
The Tool Provider Customer Parameter will require to have the following parameter:

- user.system.role=@X@user.role@X@

Deep Linking Content Tool

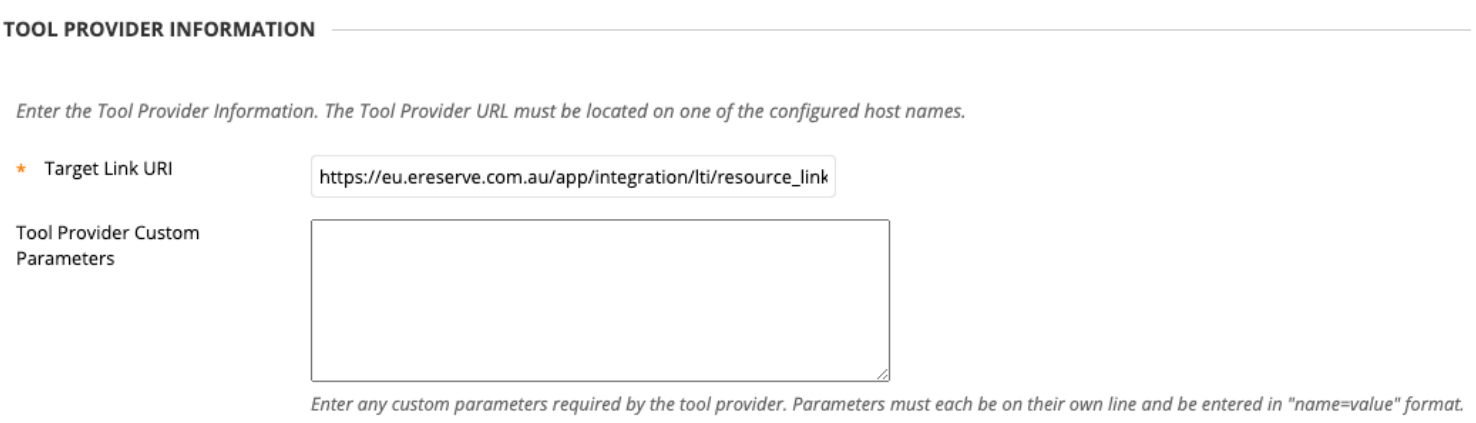
Below will be the required information for the creation of the *Deep Linking Content Tool* placement.

1. *Label:* The placement Label can be named anything you like to suit your institutional vocabulary however we recommend something that is relevant to the placement as this will be displayed in courses.
2. *Handle:* The placement Handle uniquely identifies the placement.
3. *Availability:* The placement Availability will determine whether the placement will be available or not - This should be set to **Yes**.
4. *Type:* The placement Type will need to be set to *Deep Linking Content Tool* with *Student Access* disabled.



The Tool Provider Information will require the *Target Link URI* to be populated. An example of that link can be found below:

- https://example.ereserve.com.au/app/integration/lti/resource_link/generate where the *example.ereserve.com.au* would be your eReserve domain.

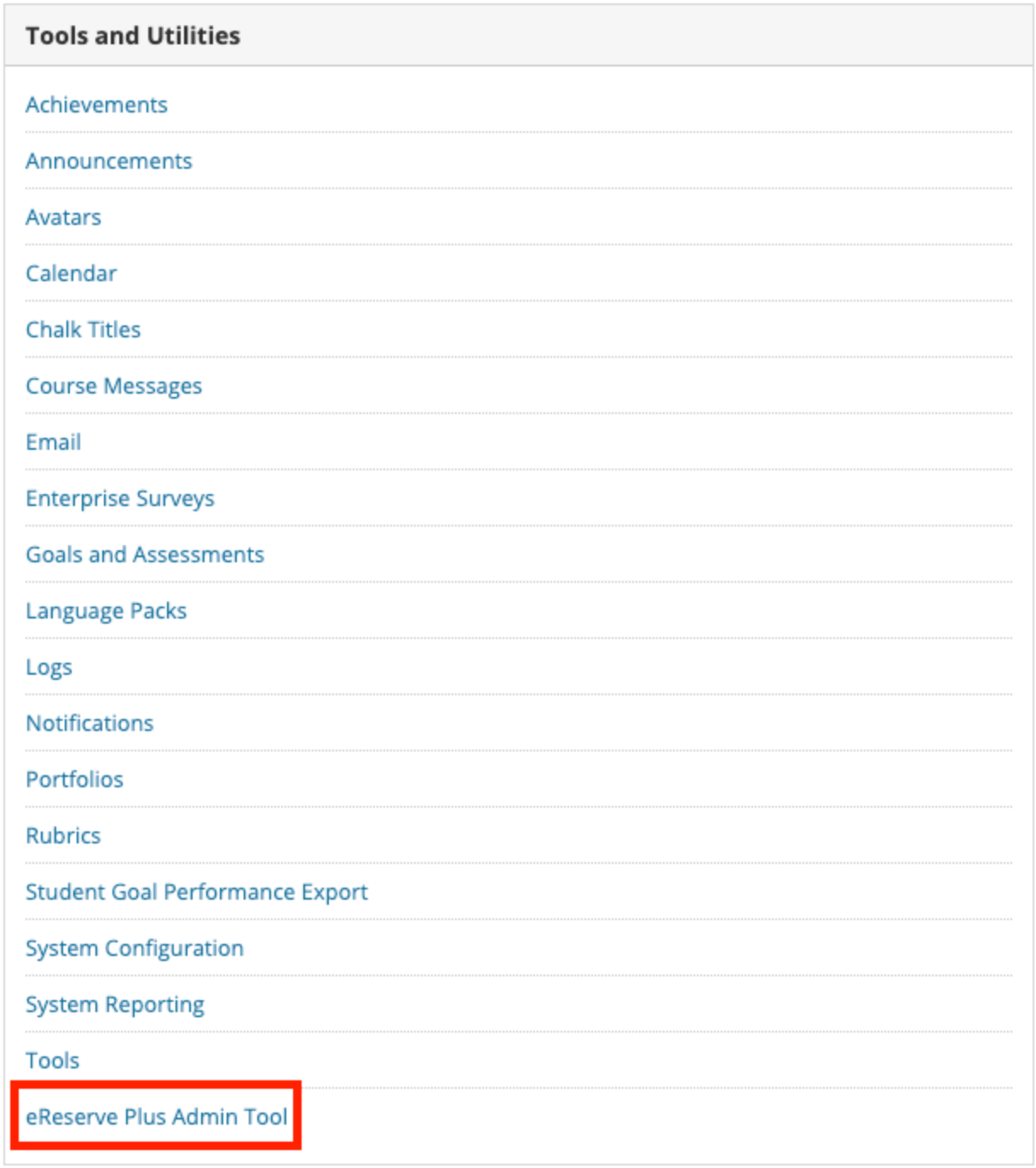


Once the above have been completed, you will be able to Authorise and Activate the LTI1.3 Tool for the creation of Resource Links.

3.4 Authorisation

To Authorise your platform you will need to use the following steps:

1. Login as a Blackboard Administrator
2. Navigate to the **Administrator Tools**;
3. Click on the **eReserve Plus Admin Tool** in the **Tools and Utilities** panel;
   (**NB:** If you have chosen a different eReserve Plus Admin Tool name than what is recommended in **Section 3.3** then you will be looking for that name)
4. You will be present with a **Authorise** your LMS instance;
5. Click on the **Authorise** button;
6. If you have not logged into your institution's eReserve Plus instance then you will be presented with a login page. Login in with an account that has the **Site Manager** role. If you do not have an account then please contact the eReserve Support Team;
7. Once logged in you will see a notice letting you know that the authorisation is complete;



> NB: You will need to be logged in as a Blackboard Learn Administrator and also have an eReserve Plus account with the Role of Site Manager in your institution's eReserve Plus instance which matches your Blackboard Learn 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 the Site Manager

role to complete the 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 LMS to use your institution's eReserve Plus instance.

3.5 Activation

Once you have authorised the platform (i.e. your 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 LMS instance.

3.5.1 Reading lists, unit codes and unit names

When displaying the Reading Lists eReserve Plus will use the unit code from your LMS to know which Reading Lists to display. For a lot of Institutions the unit code will change each time it is offered. For example, a unit code for one offering may be CS101_S2_2014 and the next offering the unit 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 unit code filtering.

3.5.2 Unit Code Prefix

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

3.5.3 Unit 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 unit code (e.g. CS101 in the example above). To set the filtering simply edit the associated integration record in the Integration Management interface and complete the **Unit 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 unit 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.

3.5.4 Unit code matching field

The majority of Learning Management Systems will send the Unit 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 Unit Code Filter.

3.5.5 Unit code match flattening

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

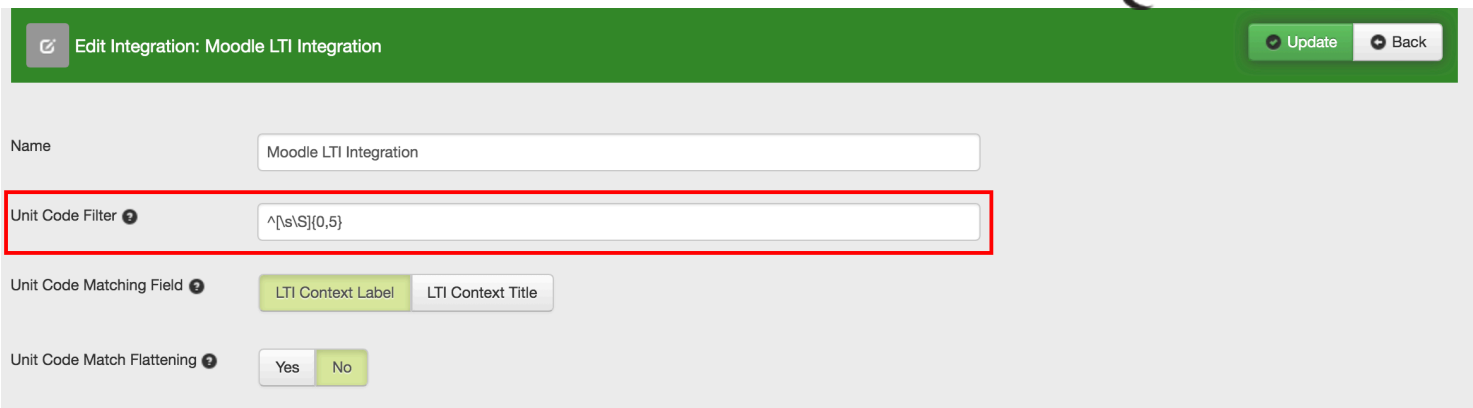
3.5.6 Example unit code filter

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

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

We'll be using the following unit 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 **Unit Code Filter** field then saving the integration record. So every time the unit is offered eReserve Plus will only look at the base_code when choosing a reading list to display.



3.5.7 Unit name filter

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

When utilised the LTI Unit 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.

3.5.8 Unit name match flattening

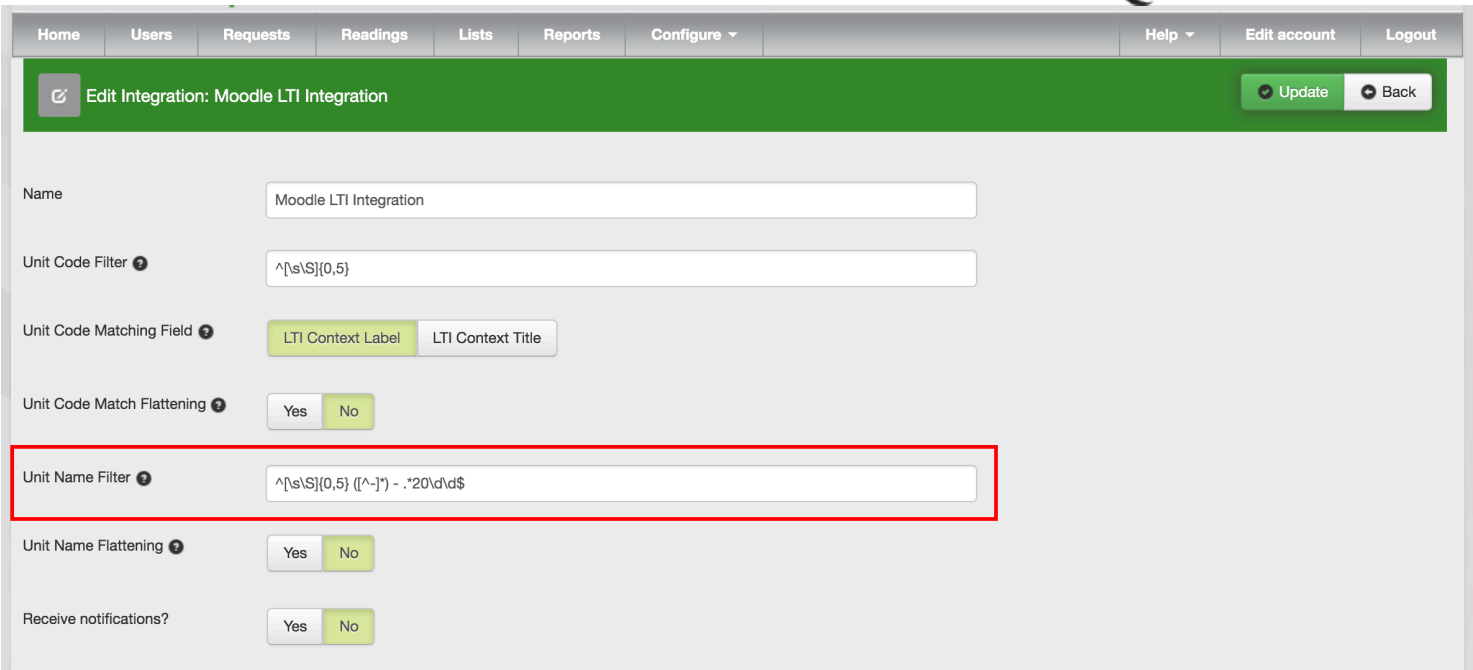
In the same manner as the Unit Code Filter if set to yes all text captured by the regex is joined together in the resulting course name.

3.5.9 Example unit name filter

The Unit Name Filter can be designed to remove the Course Code and Time Period which in eReserve Plus will be represented by the Unit Code and eReserve Plus reading list name. The matched string for the Unit Name would be **Civil and Criminal Procedure**.

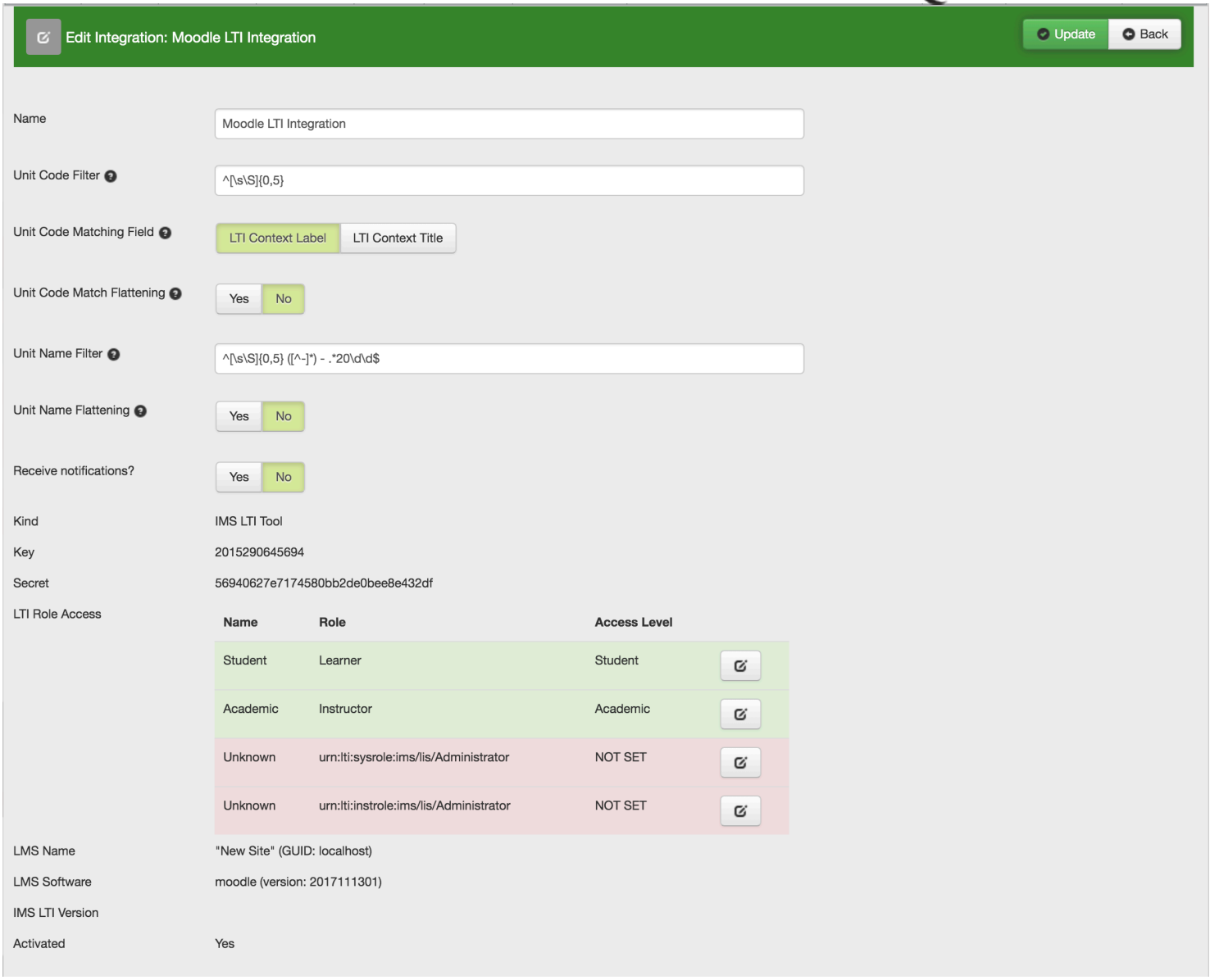
```
^[\s\S]{0,5} ([^-]*) - .*20\d\d$
```

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**.

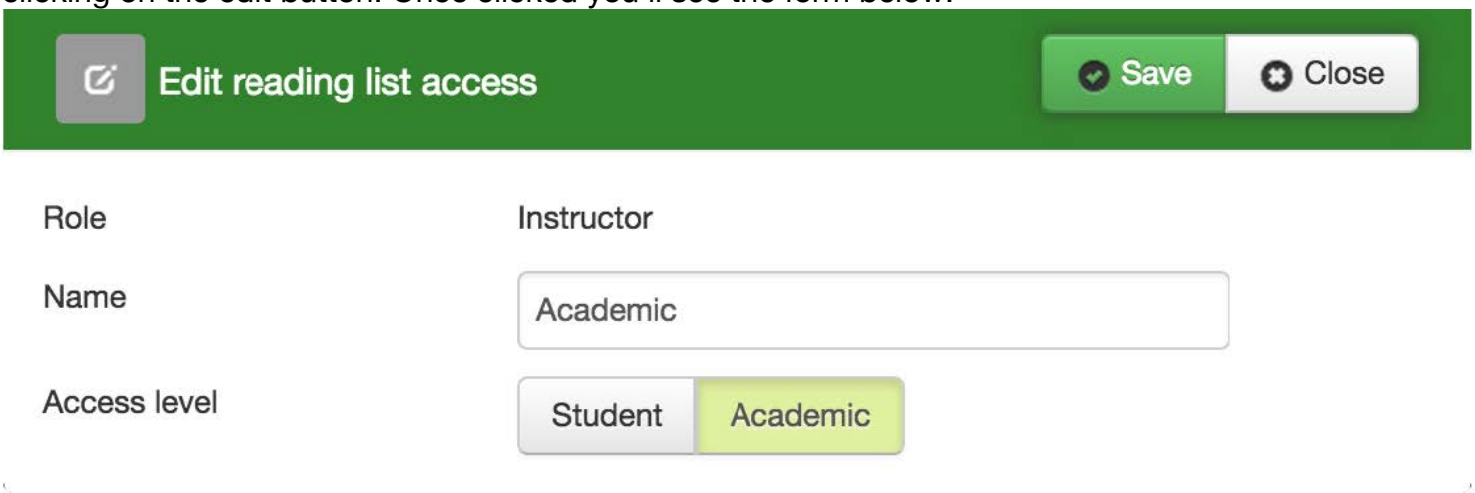


3.5.10 Reading list access management

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.



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.



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.

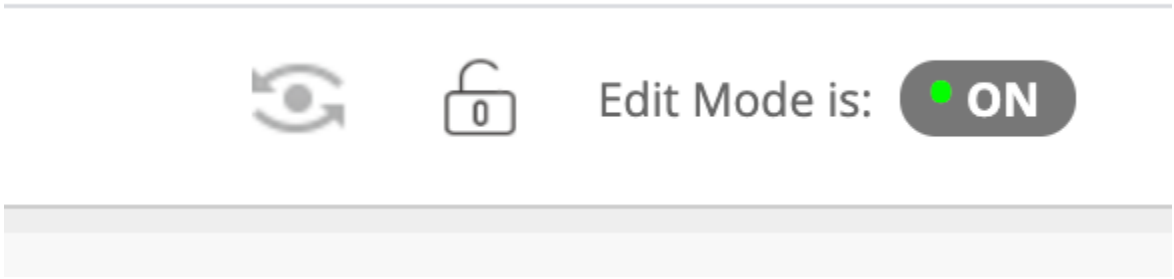
The first time an LTI role attempts to access eReserve Plus, the role will be made available in red as per the screenshot above until the Role is mapped in eReserve Plus to a **Student** or **Academic**; at which time it will become green (authorised). If there are Roles in your LTI which have not become 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.

3.6 LTI Link Placement

Once the LTI Tool Providers (section 3.2) and LTI Tool Placements (section 3.3) have been created/ completed, people who are responsible for course content management can put the LTI links in Blackboard Learn courses or templates.

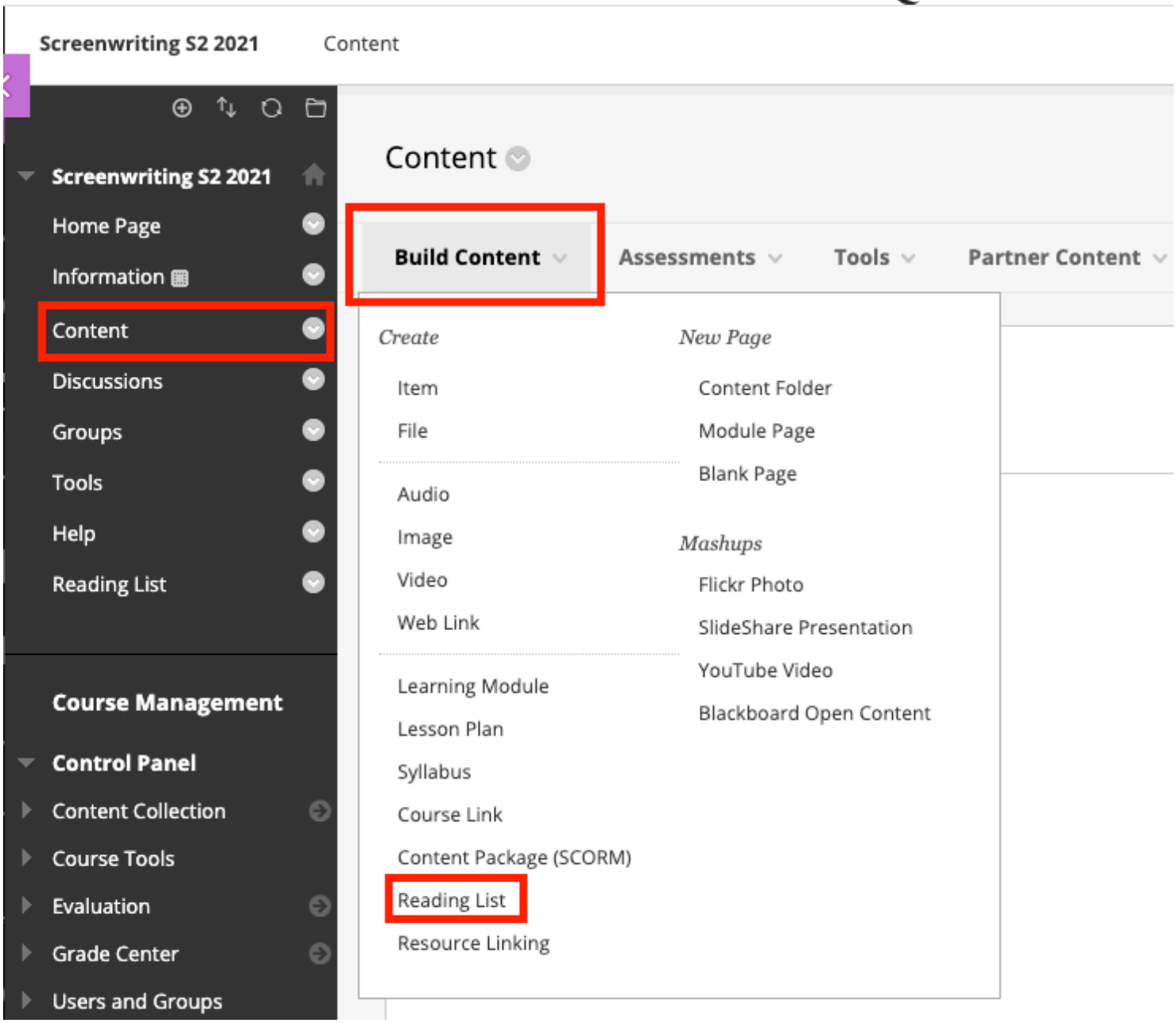
3.6.1 LTI Link Placement within Course Content - Classic Experience

To create a link in course content firstly, make sure that editing for the course is turned on.

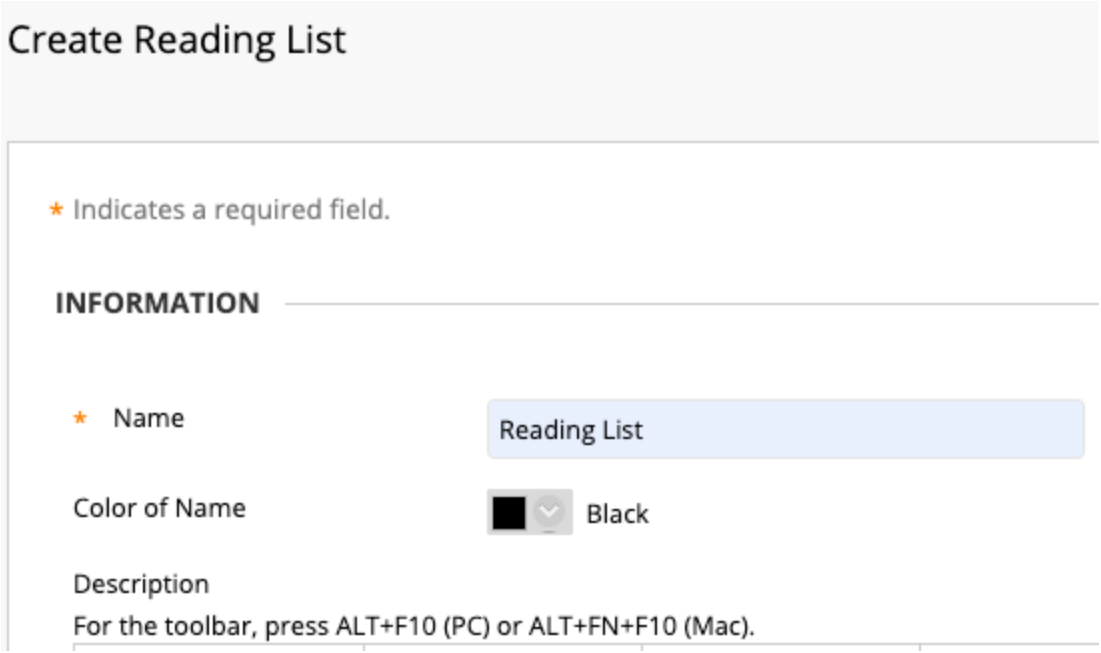


Then navigate to the course content then click on the **Build Content** and then select the *Course Content Tool* i.e. Reading List (see below).

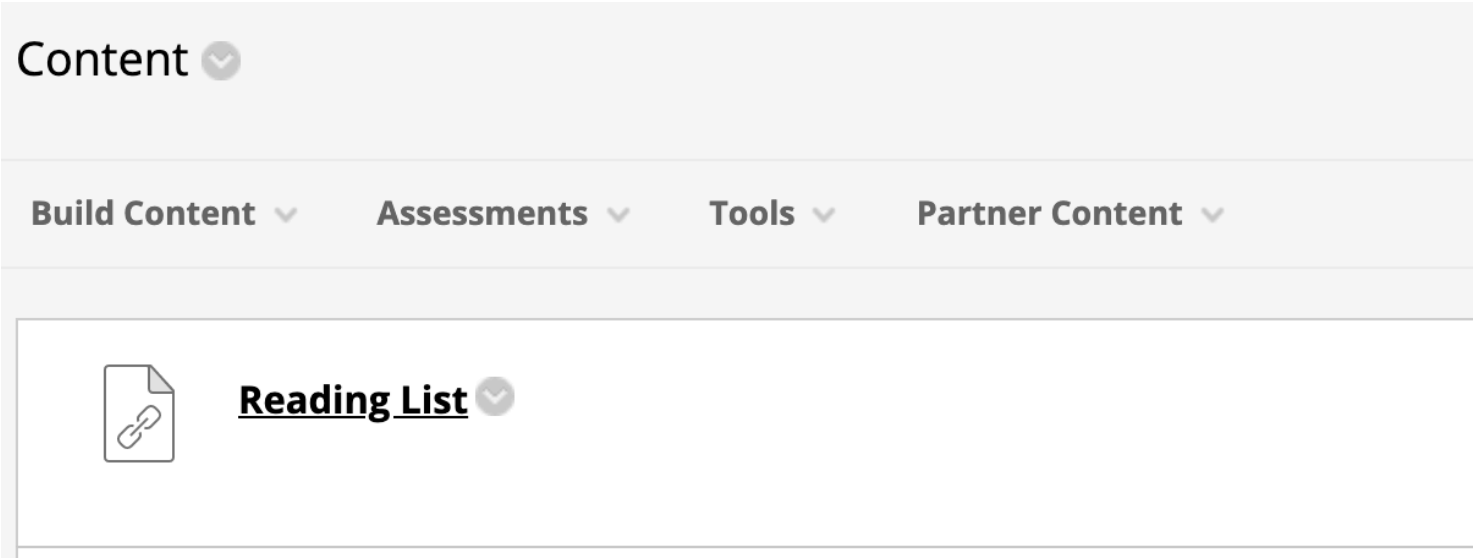
Please note that the name **Reading List** is the name of our placement that we created earlier (see 3.3 LTI Tool Placements - specifically the *Course Content Tool*)



Once you have selected the *Course Content Tool*, you'll then see the create form (see below). All you need do is fill in the **Name** for the link then click on the **Submit** button. All other fields are optional and can be set as needed.



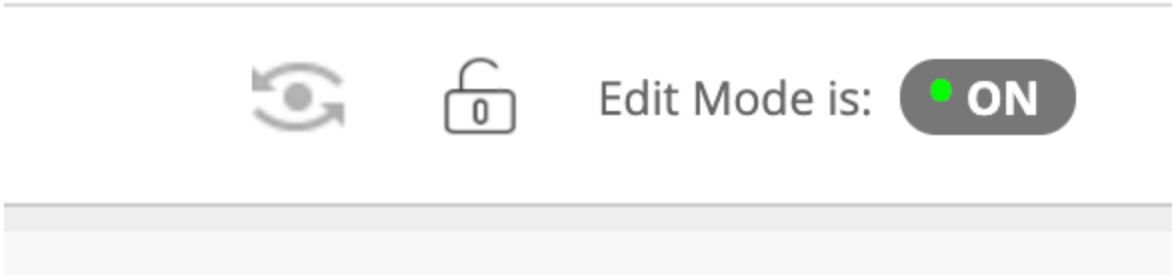
After creating the link it will be displayed in the course content. To get to the reading list for eReserve Plus it's just a matter of clicking on the link that was created. Depending on your role you will either see a read only reading list (e.g. for students) or the reading list management (e.g. for course builds, academics, etc.)



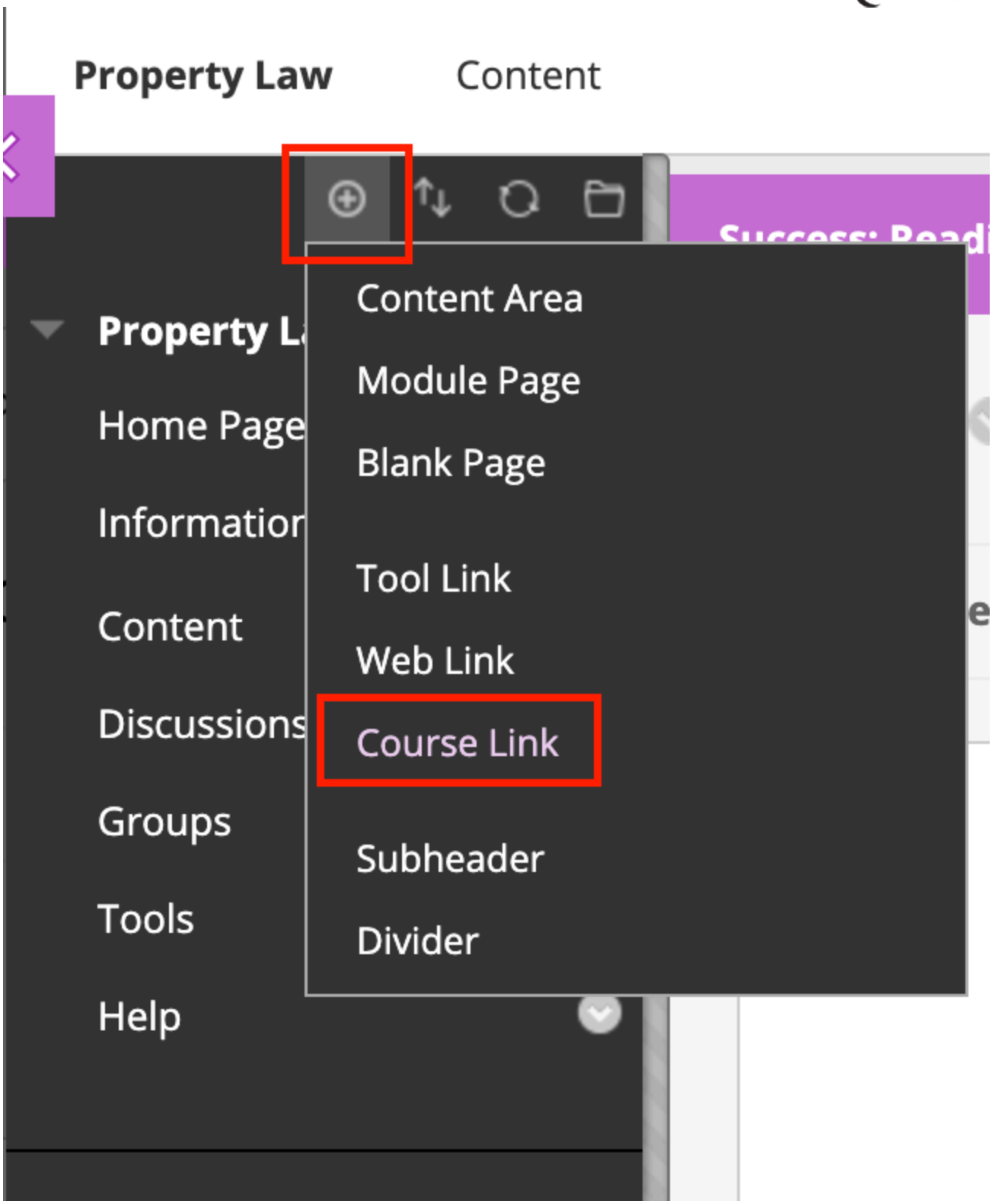
3.6.2 LTI Link Placement within Course Menu - Classic Experience

Within your courses you can create a link in the course menu to eReserve Plus using **Course Links**. To create the link in the course menu you must have already created a *Course Content Tool* (see 3.6.1). Once you have the *Course Content Tool* you can use the following steps to create a link in the course menu.

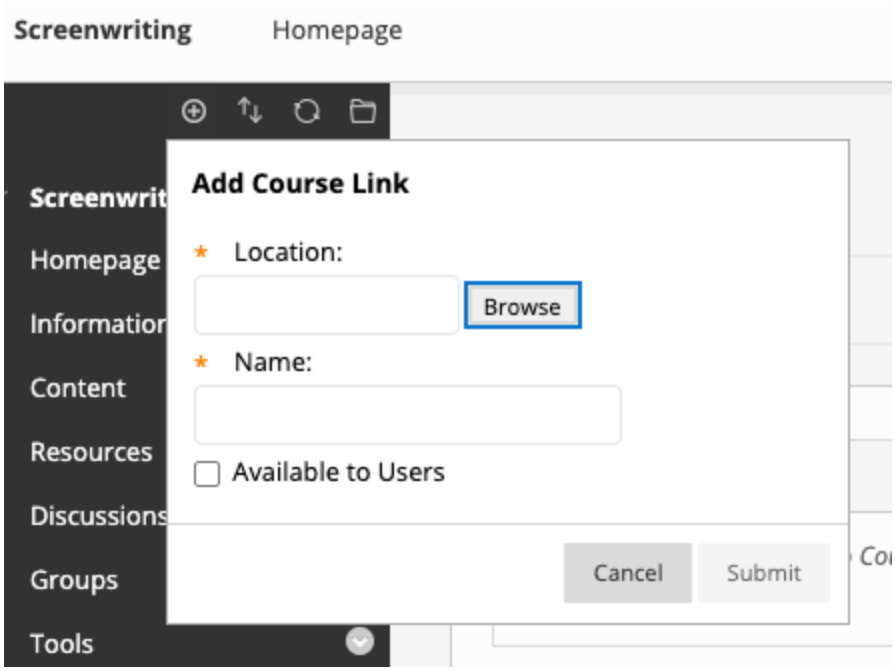
1. Make sure course editing is turned on.



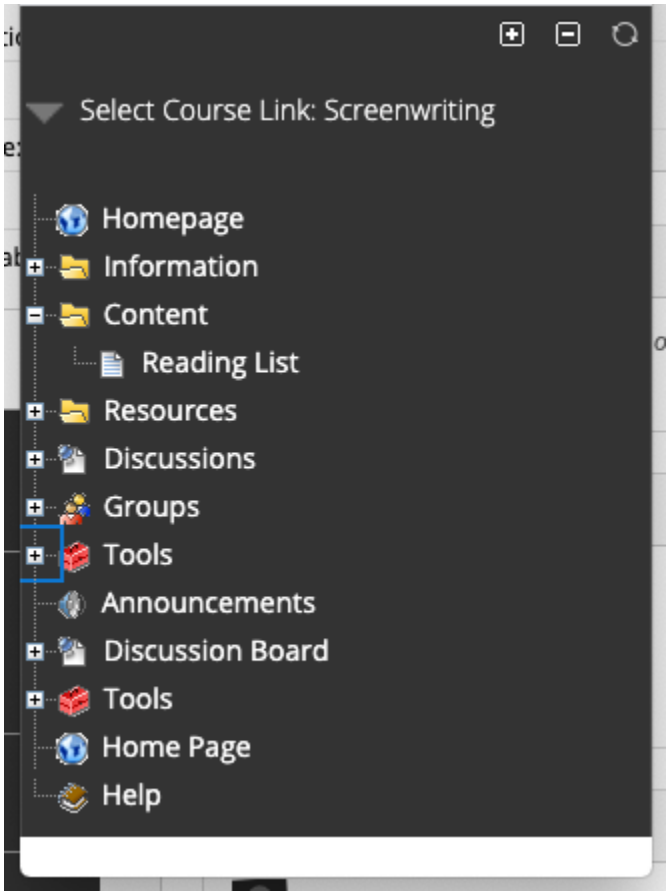
2. Click on the **Add Menu Item** button
3. Click on the **Course Link** menu item.



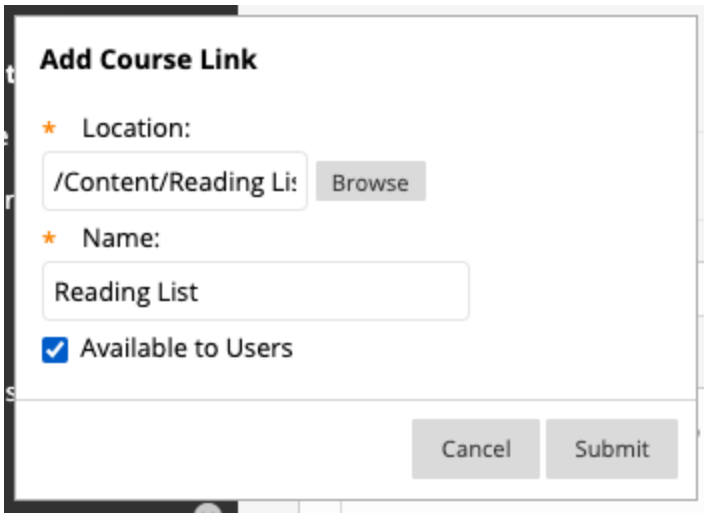
4. Once clicked, the **Add Course Link** form will be displayed (see below). Click on the **Browse** button to select the Location.

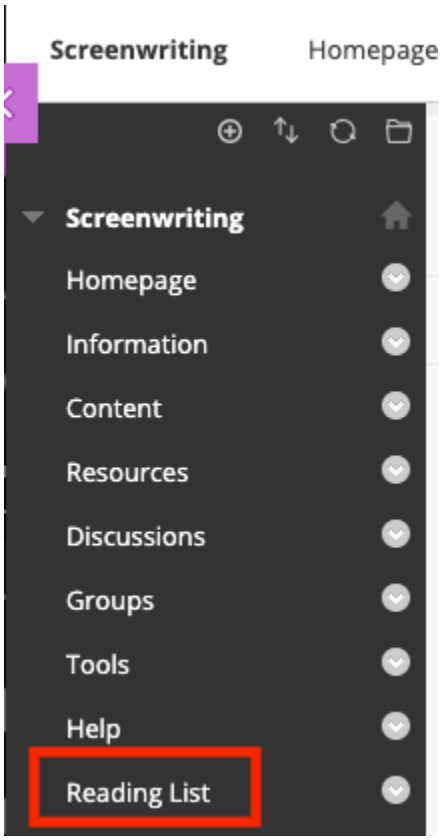


5. Once clicked, you will see the **Select Course Link** form. Choose the content link you created earlier by clicking on it. In the example below it's the **Reading List** in the **Content** folder.



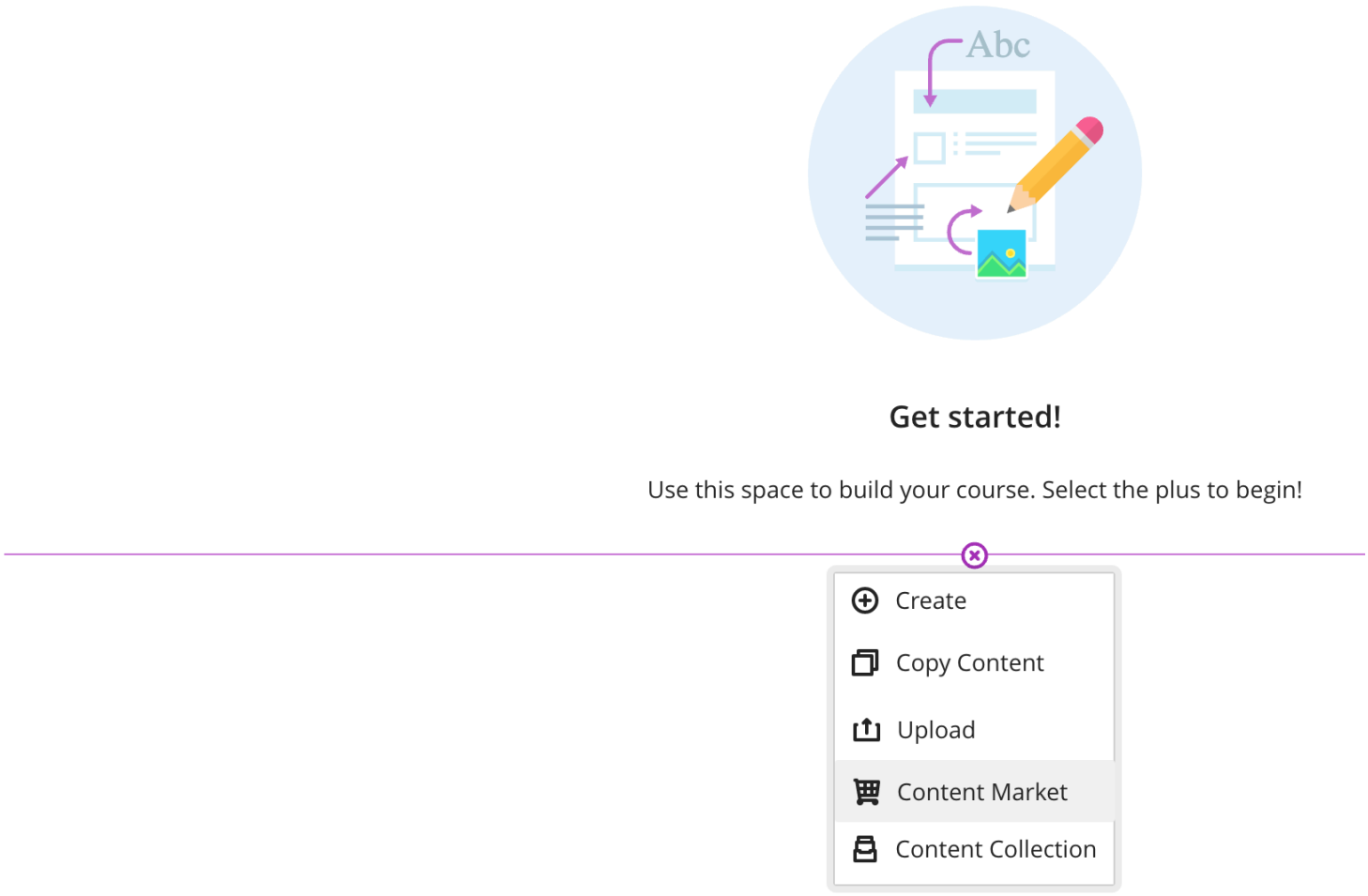
6. Once you've selected the content link tick the **Available to Users** checkbox, change the **Name** as you see fit then click on the **Submit** button. The link will now appear in the course menu.



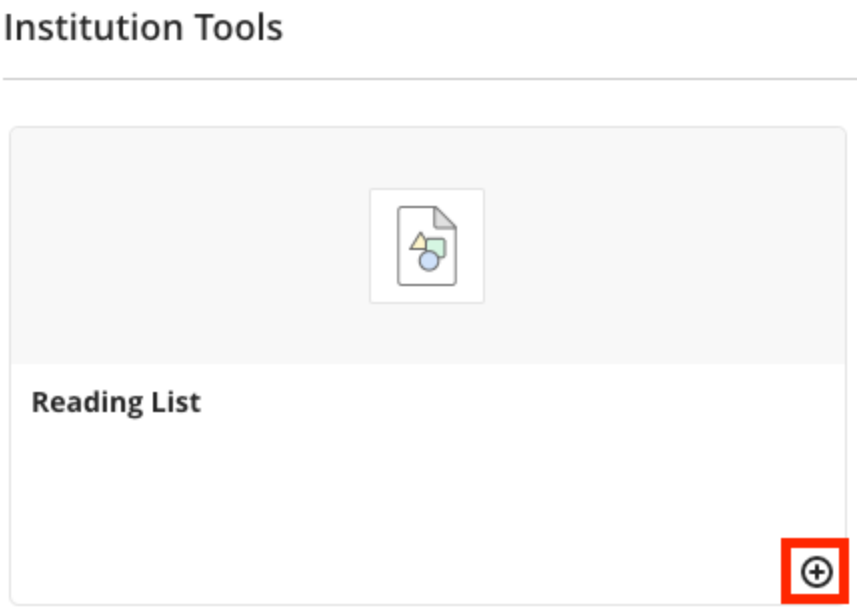


3.6.3 LTI Link Placement - Ultra Experience

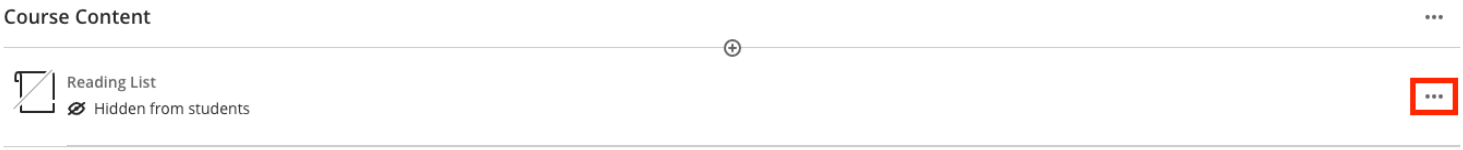
To create a link in course content, first select the *create* menu and select the *Content Market* menu item.



From there, hover over the *Course Content Tool* that we created earlier (in this case it is labelled *Reading List DEV*) which is under *Institution Tools* and select the plus symbol in the button right corner.



Once selected, it will automatically be added to the Course Content section. Hovering over it, you can click on the ellipse to edit and change the name and make it available to student.



3.7 Editing the Registration Form

To edit the Registration Form or to change details such as the Unit Code Filter or LTI Role Access, you will be required to be logged in as an Blackboard Administrator.

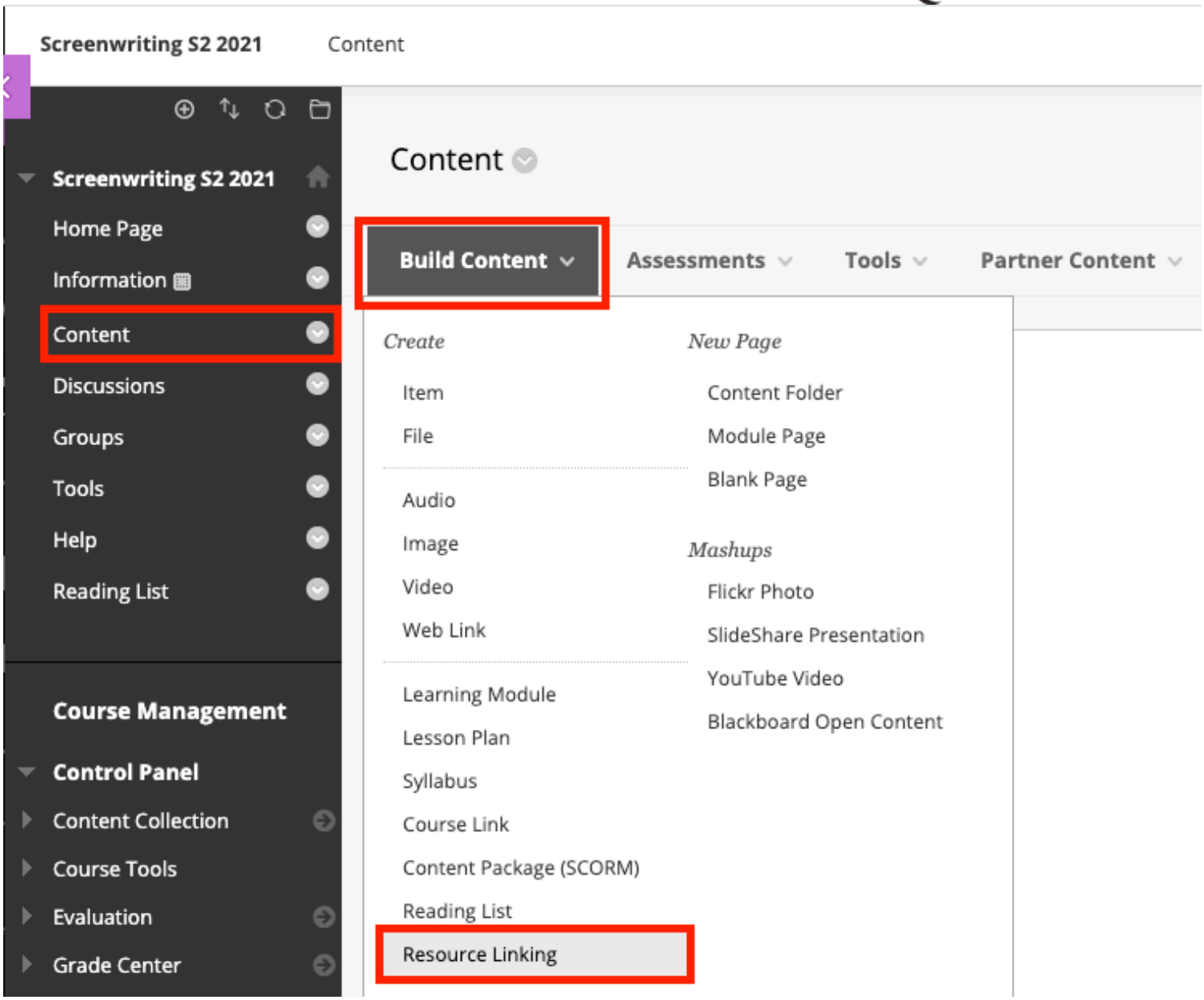
From there, you will need to navigate to *Admin* and at the bottom of **Tools and Utilities**, there is an *eReserve Admin* menu item. Once selected, it will take you to the Re

3.8 Resource Linking with Blackboard

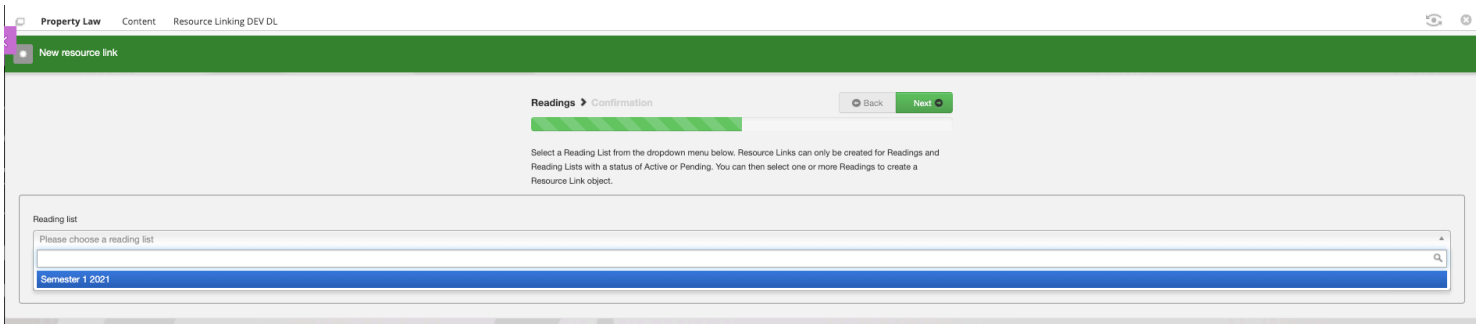
Once the LTI Tool Providers (section 3.2), LTI Tool Placements (section 3.3) and the LTI Link Placements (section 3.6) have been created/completed, people who are responsible for course content management can put the LTI links in Blackboard Learn courses.

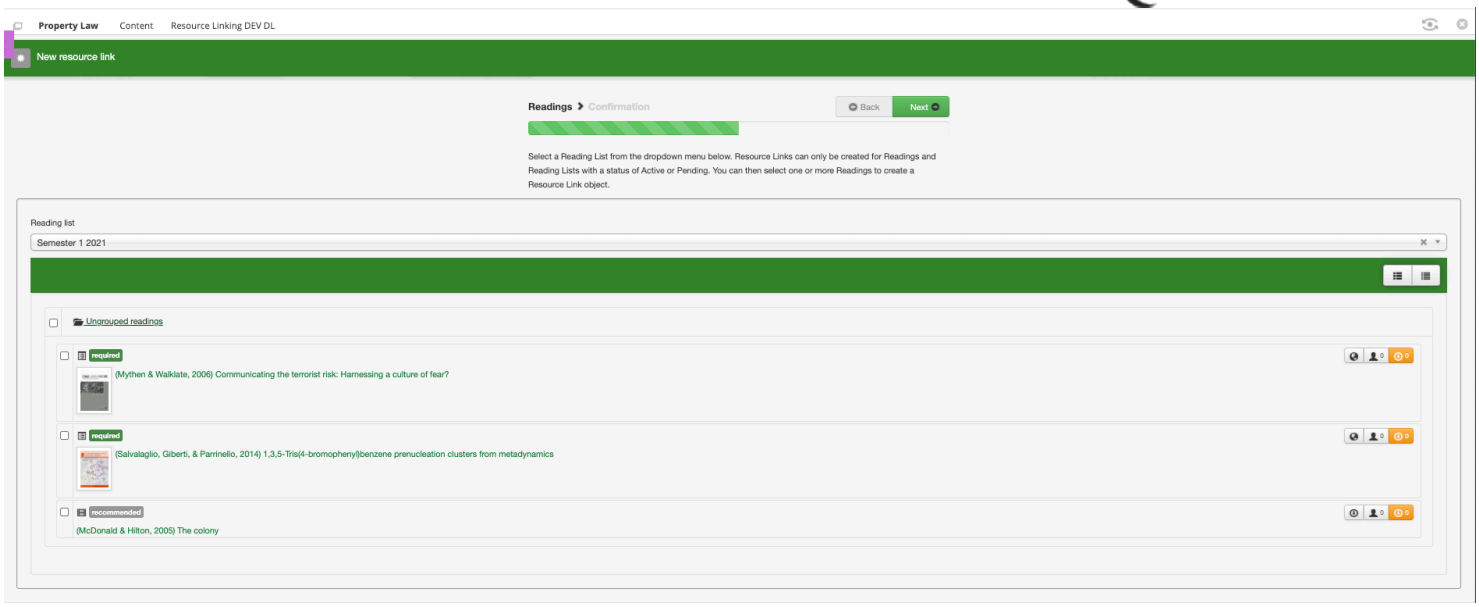
3.8.1 Resource Linking - Classic Experience

For the Classic Experience of Blackboard, you will be able to use the following documentation to create Resource Links. To add and create Resource Links, navigate to *Course* and select *Content*. Once there, select the *Build Content* dropdown and select the Resource linking tool that was created earlier (this will be named when the *Deep Linking Content Tool* was created in section 3.3 - In this case, it has been labelled *Resource Linking*).

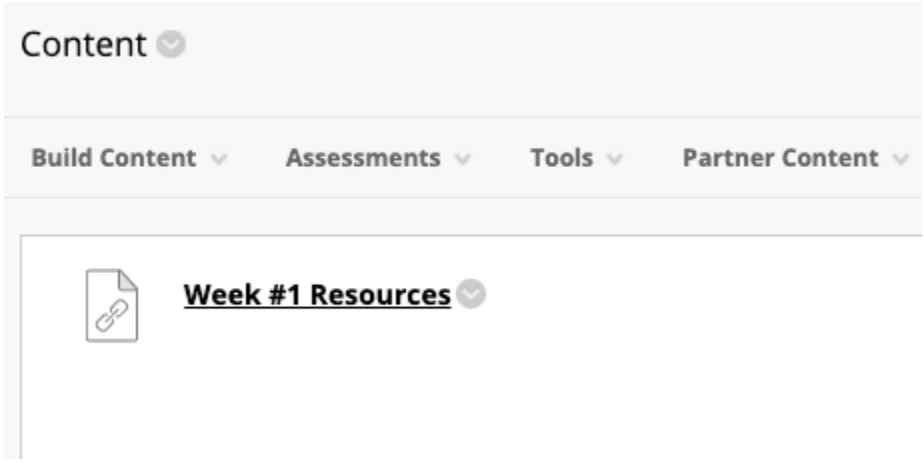


From there, it will take you through the steps to select a Reading List and Resources to add.





Once the link has been created, it will display by default as *LTI Link* however this can be changed by editing the Content item and changing the name to suit.



3.8.2 Resource Linking - Ultra Experience

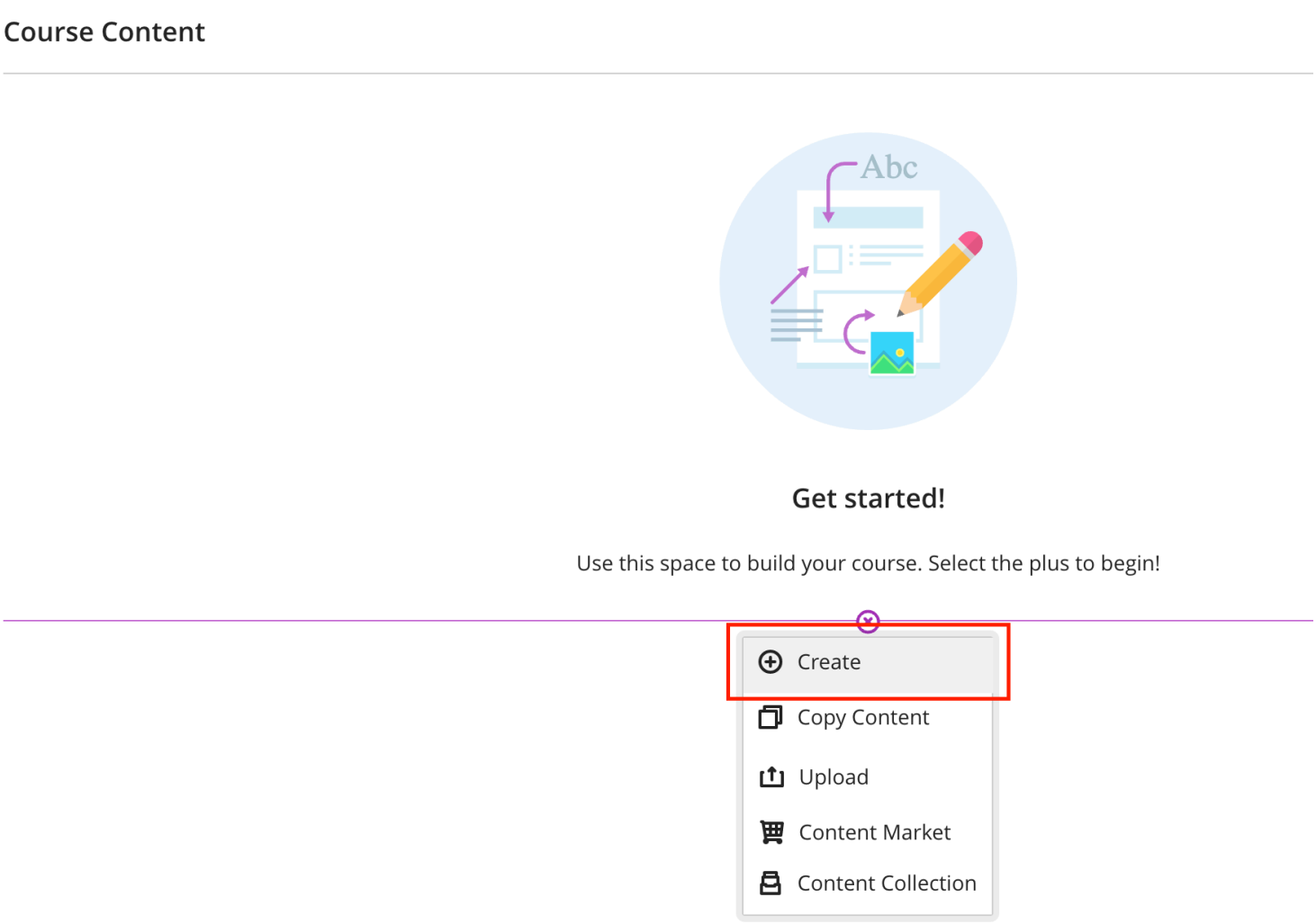
For the Ultra Experience of Blackboard Learn, you will be able to use the following documentation to create Resource Links within Course Content.

> Resource Links can be created and added where there is an HTML editor (i.e. Documents and Discussion)

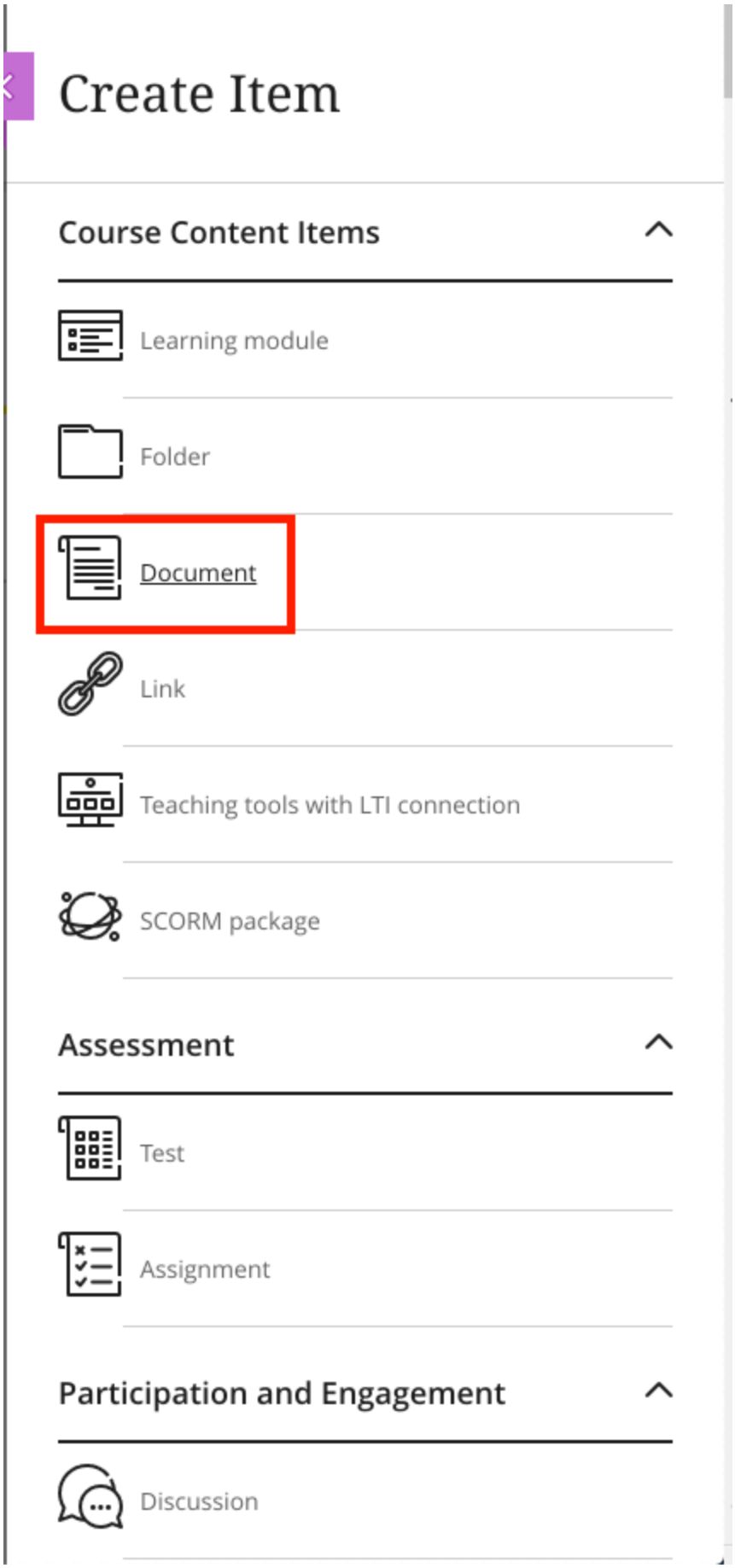
A video can be found on how to create Resource Links below.

For the following documentation, we will create a new Document. To add and create Resource Links, navigate to create a new Document (see below) and select the menu item to create new course

content.



Once selected, select to create a new *Document*.


Create Item
Course Content Items
Learning module
Folder
Document
Link
Teaching tools with LTI connection
SCORM package
Assessment
Test
Assignment
Participation and Engagement
Discussion

From there, select *Add Content*.

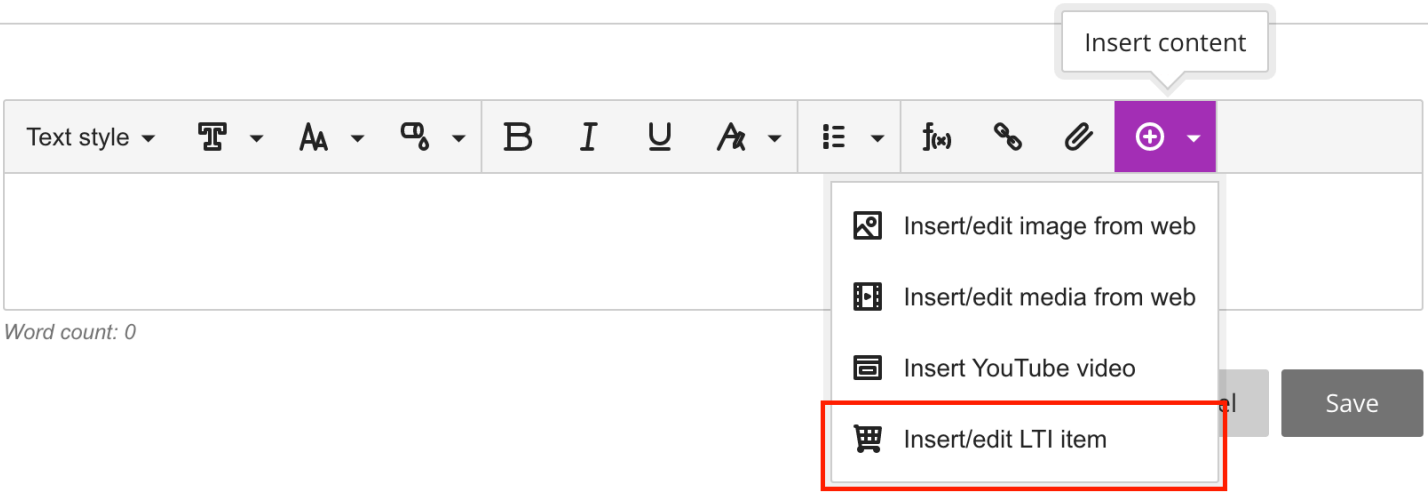
Use this space to build your document.

All your work is saved automatically. Just close the document when you're finished.

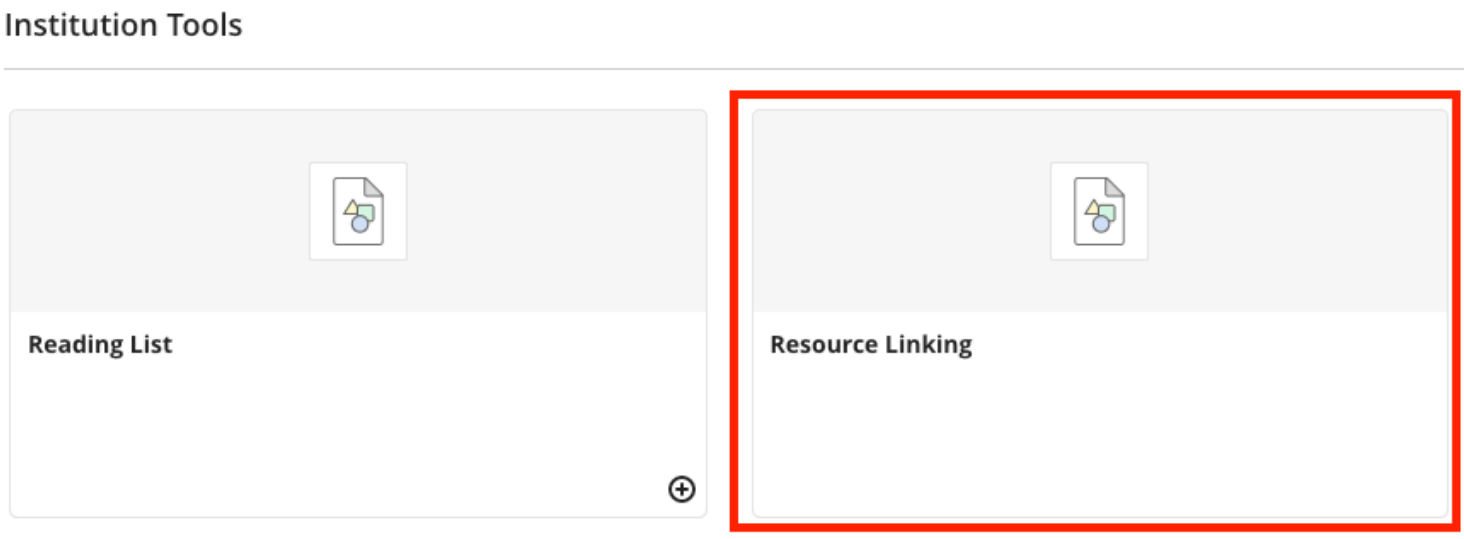
Add Content

Upload from Computer

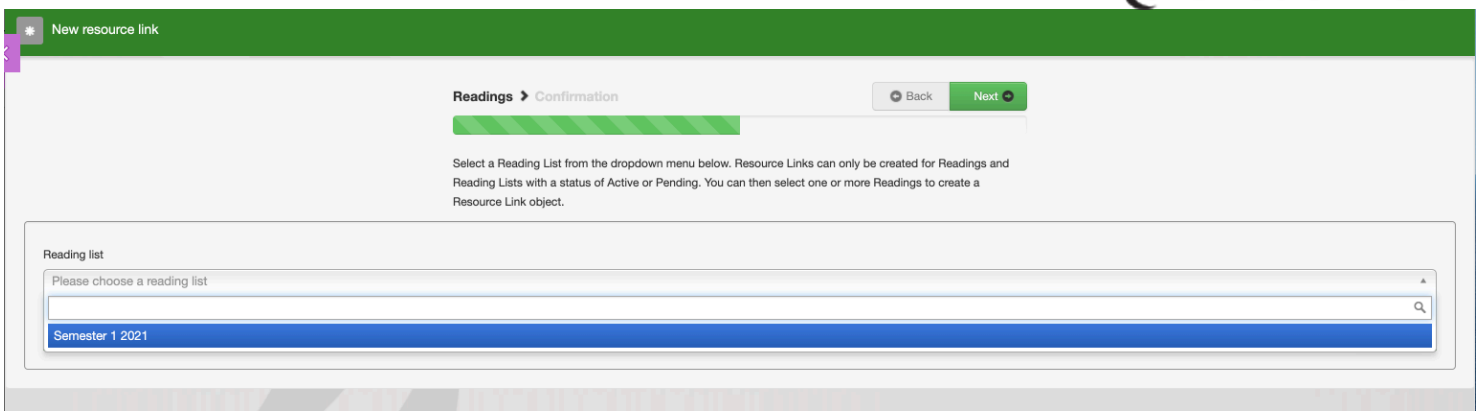
You will be presented with an HTML Editor. Select the *Insert Content* dropdown fromt he menu and select *Insert/edit LTI item*

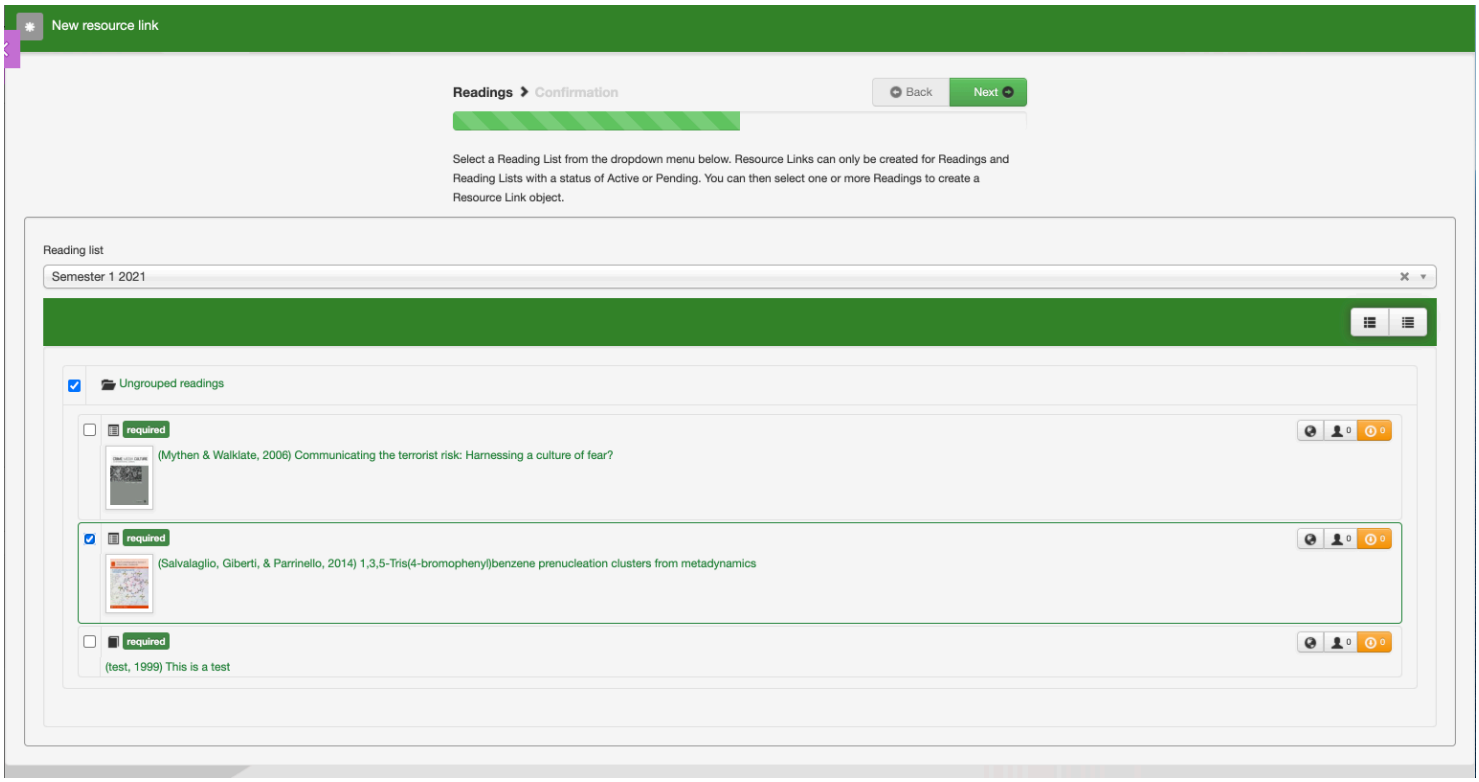


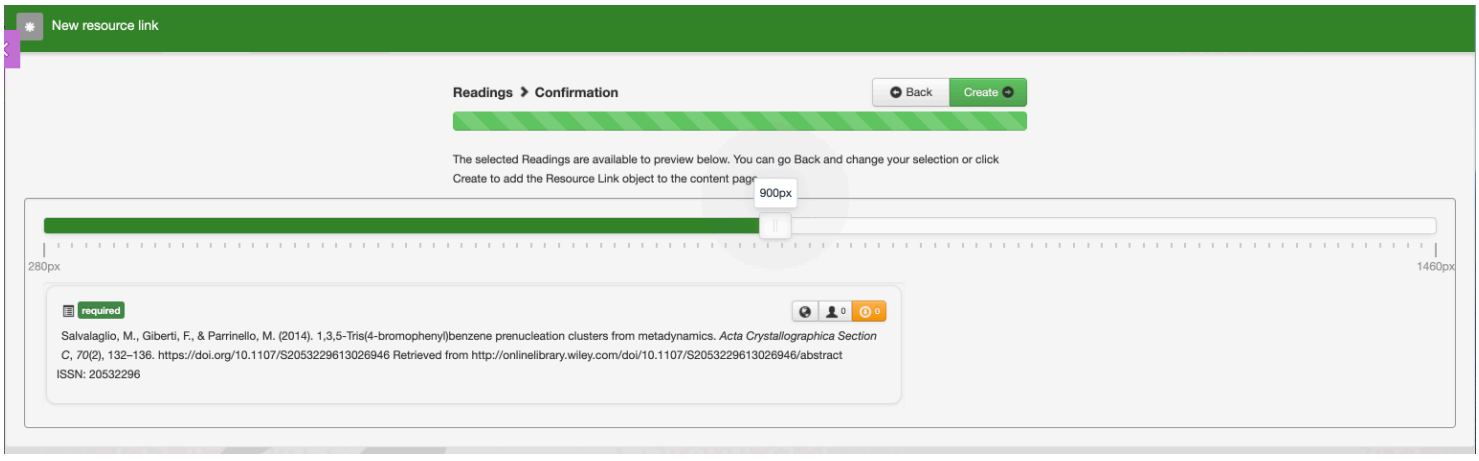
Under *Institution Tools*, select the *Deep Linking Content Tool* that was created earlier in section 3.3 of this document - In this case, it has been labelled *Resource Linking*.



Once selected, you will be presented to select a Reading List and resources to add as Resource Links.







Once the Resource Link/s have been selected, created and resized, it will display in the document HTML editor.

Property Law

Topic One

Please read the following resources.

Brightspace LMS

Throughout this section of the document are the details on getting your Brightspace instance connected to eReserve Plus. It's very important to read all of the details in section 2 of this document, and complete all of the activities in this section. Section 2 deals with the setup required on the eReserve Plus side, including the generation of the LTI Key and Secret. Should you have any questions please contact the eReserve Support Team at support@ereserve.com.au

4.1 Requirements

The eReserve Plus LTI Tool is regularly tested with the Brightspace releases supported by D2L. It is recommended that you use a D2L supported version of Brightspace however the eReserve Plus LTI Tool has been tested with earlier Brightspace versions without incident. This document covers configuration of Brightspace hosted by D2L.

4.2 LTI Advantage Access

In order to configure and manage LTI Advantage Tools you will need to configure permissions on the roles for those staff performing these tasks. When logged in as the Super Administrator you do the following for the roles that need the access:

1. Click on *Roles and Permissions* in the *Security* section of the admin settings menu.
2. You will be presented with a table of roles.
3. Select the role name that you want to give admin access and manage the LTI Advantage Tools and select *External Learning Tools* for the *Filter by Tool* option.
4. Tick the two options for LTI Advantage Tools (see screenshot below)
5. Click *Save and Close*

D2L Brightspace

ES eReserve Super Administrator

Announcements Calendar Data Access Help

Edit Permissions - Super Administrator

Filter by Role: Super Administrator

Filter by Tool: External Learning Tools

Apply Filter

Choose Org Unit Types

External Learning Tools	All	Organization	Course Template	Course Offering	Group	Semester	Section	Department	Program
Manage External Learning Tools Configuration	☐	☑	☑	☑	☐	☐	☐	☐	☐
Launch External Learning Tool Links	☐	☑	☑	☑	☐	☐	☐	☐	☐
Manage and Delete External Learning Tool Links	☐	☑	☑	☑	☐	☐	☐	☐	☐
Manage External Learning Tool Providers	☐	☑	☑	☑	☐	☐	☐	☐	☐
Create Quicklinks from available External Learning Tools links	☐	☑	☑	☑	☐	☐	☐	☐	☐
Create External Learning Tool Links from available External Learning Tool Providers	☐	☑	☑	☑	☐	☐	☐	☐	☐
Manage LTI Advantage Tool Registrations	☐	☑	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Manage LTI Advantage Tool Deployments	☐	☑	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Figure 1: Admin User Role Permissions

4.3 LTI Advantage Registration

To complete the registration of your eReserve Plus instance within D2L Brightspace, please follow the detailed instructions found here: Register an External Learning Tool for LTI Advantage

Below are some samples for the population of key fields on the registration form:

- **Name** Enter a name to identify the registration is for your eReserve Plus instance. (e.g. eReserve Plus Staging)

- **Domain** Enter the Domain of your eReserve Plus instance. (e.g. https://eu.ereserve.com.au)

- **Redirect URLs** You will need to populate the following Redirect URLs
    - Resource link Generation: https://eu.ereserve.com.au/app/integration/lti/resource_link/generate
    - Reading List View / Manage https://eu.ereserve.com.au/app/integration/lti/reading_list/launch
    - Resource Link View: https://eu.ereserve.com.au/app/integration/lti/resource_link
- **OpenID Connect Login URL** You will need to populate the following URL:
    - https://eu.ereserve.com.au/app/integration/lti/login
- **Keyset URL** You will need to populate the following URL:
    - https://eu.ereserve.com.au/app/integration/lti/public_jwk.json

- **Extensions** Select the **Deep Linking** option only

- **Roles** Tick **Send Institution Role**

Ensure that you enable the registration. You also need to take note of the **Client ID**, this will allow you to locate the registration within the integration records in your eReserve Plus instance.

4.4 LTI Deployment

Once the registration has been completed, Deployments and be created based on the registration. Following are the steps to creating a Deployment for eReserve Plus.

1. Edit the created registration in Brightspace
2. Scroll to the bottom of the page, and select **View Deployments** link
3. You will be presented with a list of deployments, click on the **New Deployment** button
4. The **Deploy Tool** form will be displayed. Complete the form as follows:
    1. **Tool** Select the registration (e.g. eReserve Plus Staging)
    2. **Name** Enter a name to identify the deployment is for your eReserve Plus instance (e.g. eReserve Plus Staging)
    3. **Security Settings** Tick all options except **Anonymous**
    4. **Org Units** Add the Org Units that will be using eReserve Plus
5. Click in the **Save & Close** button

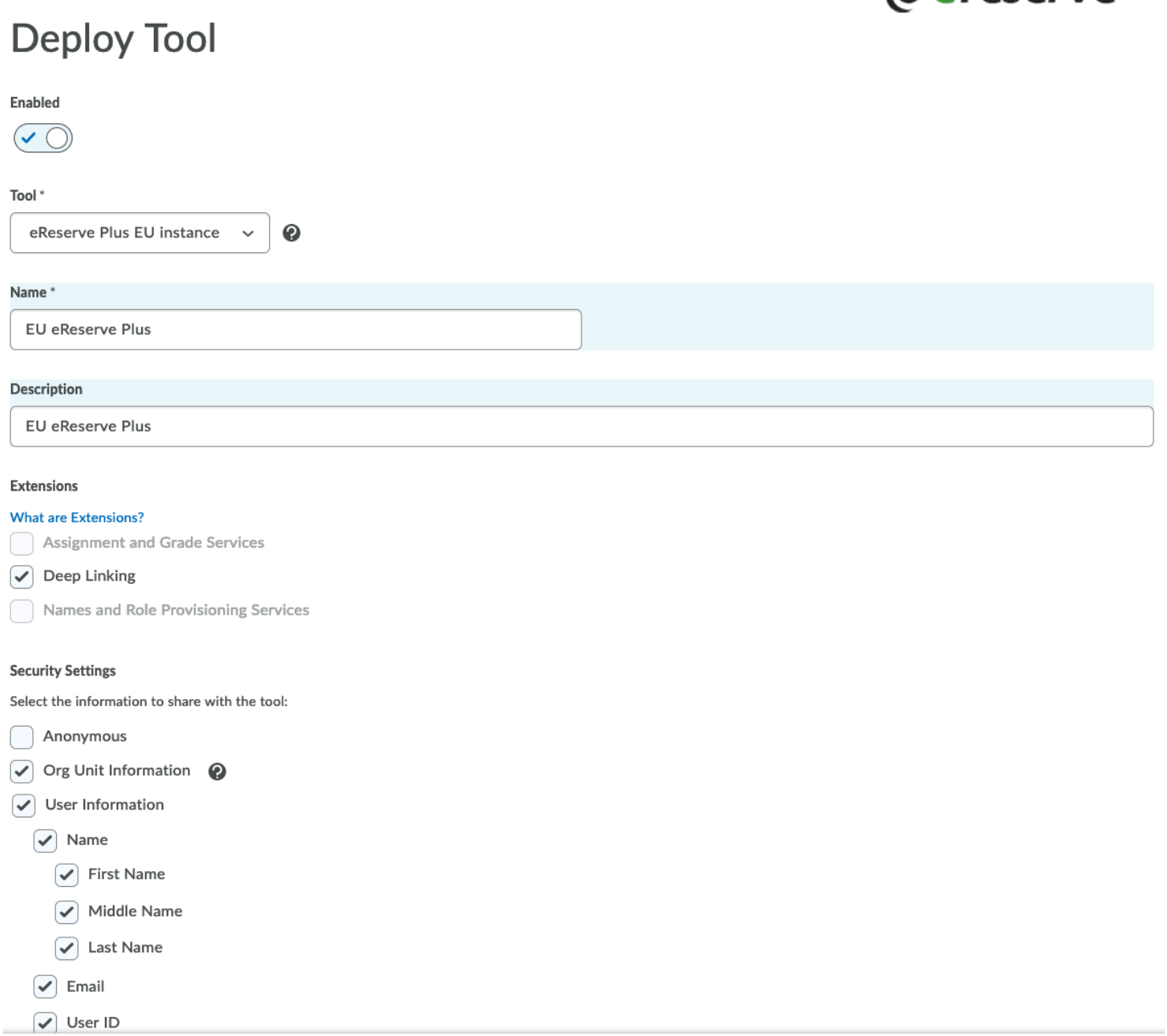


Figure 2: Creation of LTI Deployment

4.5 LTI Link Creation

Once the Deployment has been created, you will need to create links to allow access to eReserve Plus. This is completed on the links page for your deployment. To navigate to the Links page, for your deployment, use the following steps:

1. Edit the eReserve Plus deployment in Brightspace
2. Scroll to the bottom of the page, and click on the **View Links** page
3. You will now see the Links page

Now that you are on the Links page you can create the required links. Follow these steps for each link.

List View/Management

This link can be used for the management of the list for a site when you have the role of Instructor or to simply view the list for the site when you have the role of Learner.

1. Click on the **New Link** button
2. Complete the form as follows:
    1. **Name** Provide a name to identify this is the List View/management tool (e.g. Resource List)
    2. **URL** https://eu.ereserve.com.au/app/integration/lti/reading_list/launch
    3. **Type** Choose the **Basic Launch** option
3. Click on the **Save & Close** button

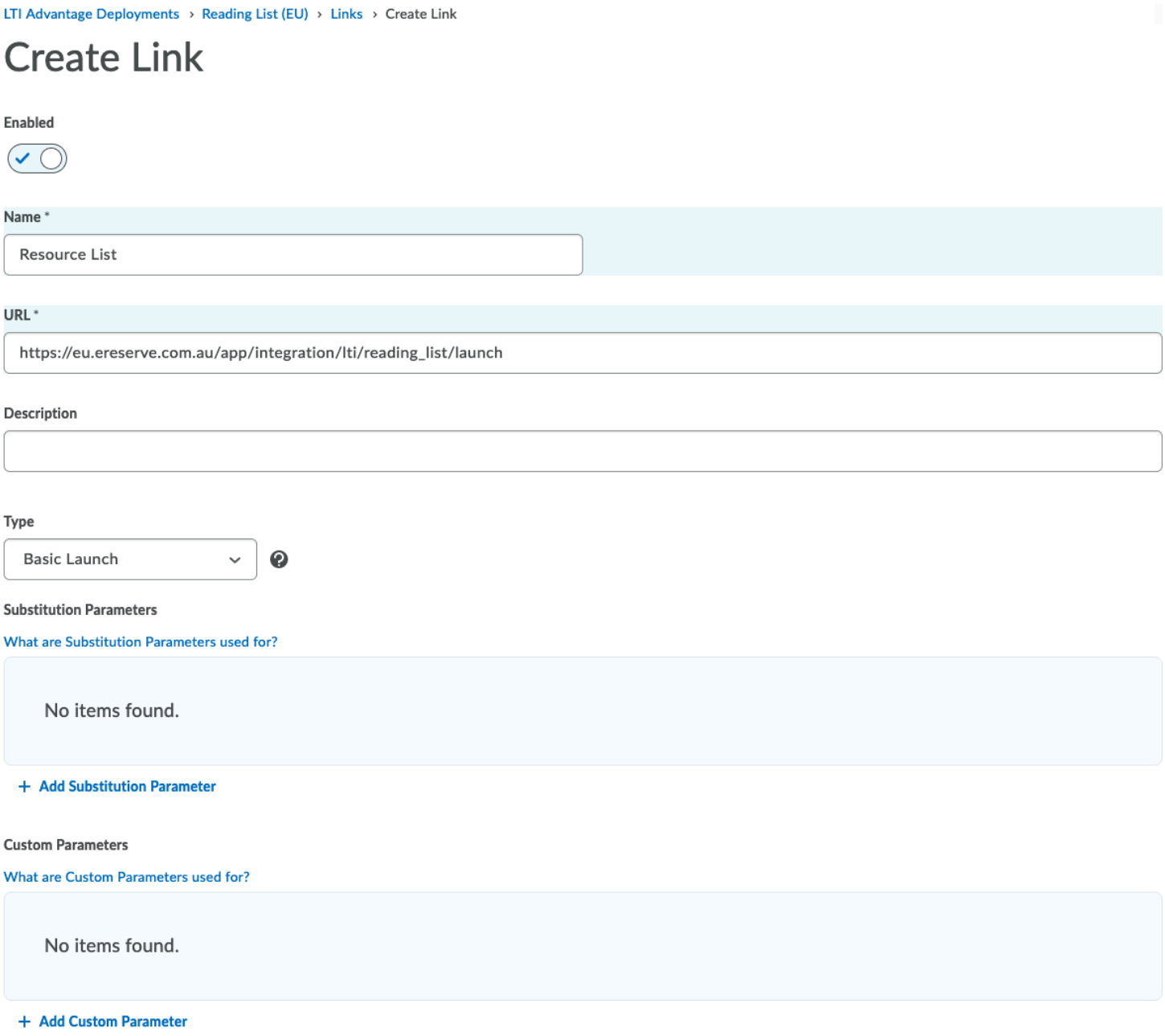


Figure 3: Creation of List View/Management Tool

Resource Link Creation

This link allows Instructors to create new Resource Links in HTML Content

1. Click on the **New Link** button
2. Complete the form as follows:
    1. **Name** Provide a name to identify this is Resource Link creation tool (e.g. Resource Linking)
    2. **URL** https://eu.ereserve.com.au/app/integration/lti/resource_link/generate
    3. **Type** Choose the **Deep Linking Insert Stuff** option
3. Click on **Save & Close** button

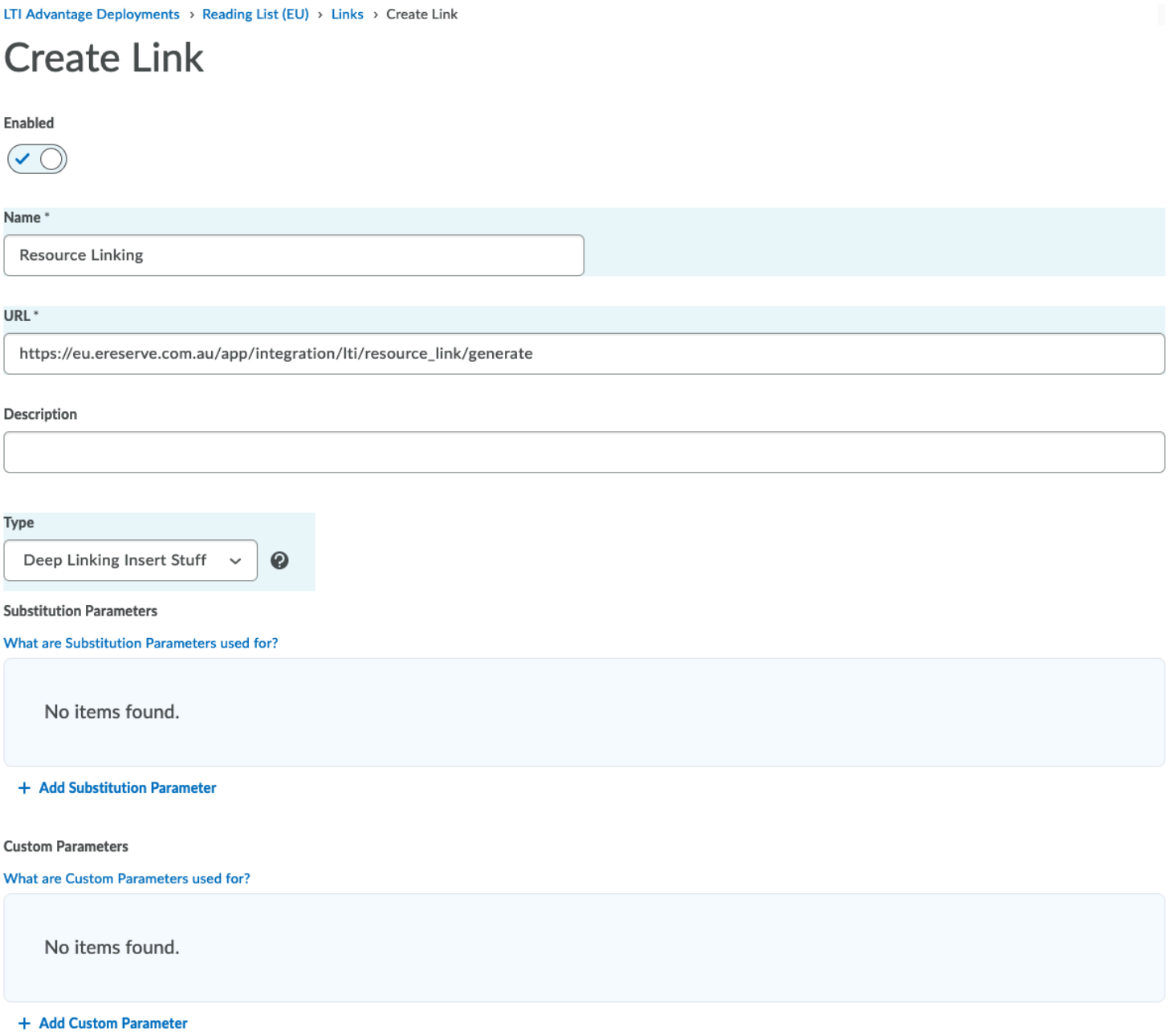


Figure 4: Creation of Resource Link Tool

4.6 eReserve Plus Activation

To activate the registration record in eReserve Plus you will first need to make the List View/ Management tool available in a site.

1. Navigate to your site in Brightspace
2. In the site content, click on the *Existing Activities* button
3. Choose the *External Learning Tools* option
4. Choose the List View/Management link created in the LTI Link Creation section
5. The link will appear on the page

You are now ready to start the activation. Please note to complete this activation, you will need to have a user account in eReserve Plus with the role of Site Manager. Following are the steps for activation

1. Click on the link you created earlier
2. You will be asked to authorise your Brightspace instance. Click on the button provided
3. You will be presented with the login page for your eReserve Plus instance, login with you Site Manager account.
4. Once authenticated you will see a notification saying your Brightspace instance has been authorised to use eReserve Plus
5. Return to Bright space then reload the page
6. Confirm the details are correct, such as the *Unit Code Filter*, *Roles* are assigned correctly etc.
7. Click on the Activate button.

Once the above steps have been completed you can then add the List View/Management link to other sites via the *Existing Activities* > *External Learning Tools* menu item. For resource links you can use Inset Stuff.

Moodle LMS

Throughout this section of the document are the details for getting your Moodle instance connected to eReserve Plus. It's very important to read all of the details in Installation (see section 2 of this document) and complete all of the activities in this section which will result in a successful connection to eReserve Plus. Should you have any questions please contact the eReserve Support Team at support@ereserve.com.au

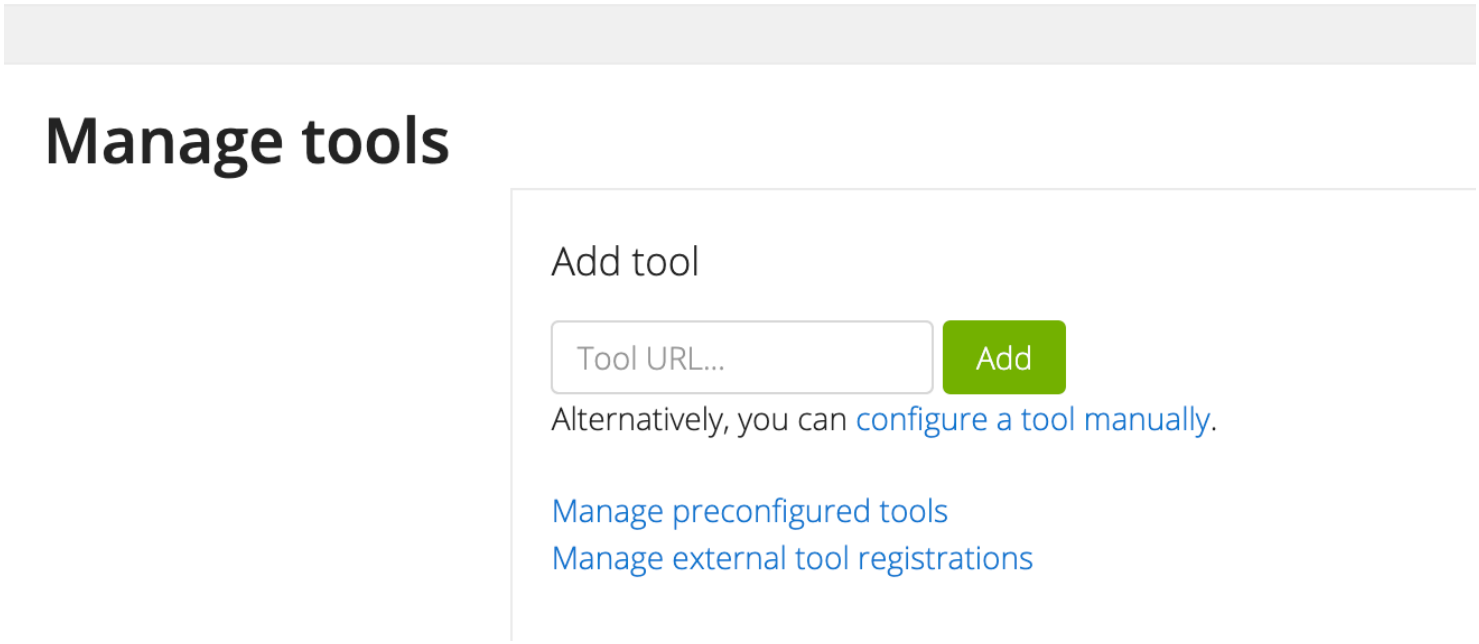
5.1 Requirements

The eReserve Plus LTI Tool is regularly tested with the releases supported by Moodle. It is recommended that you use a Moodle supported version of Moodle however the eReserve Plus LTI Tool has been tested with earlier Moodle versions without incident. It is important to note that we will not be testing against older versions of Moodle as where support has been withdrawn by Moodle.

5.2 LTI Management

In order for course maintainers link to a Reading List in eReserve Plus for their courses you will need to create a configuration in the Moodle LTI Management interface. To get to this interface you will need to be logged into Moodle as an Administrator then navigate to the following location in Moodle:

Dashboard / Site administration / Plugins / Activity modules / External tool / Manage tools

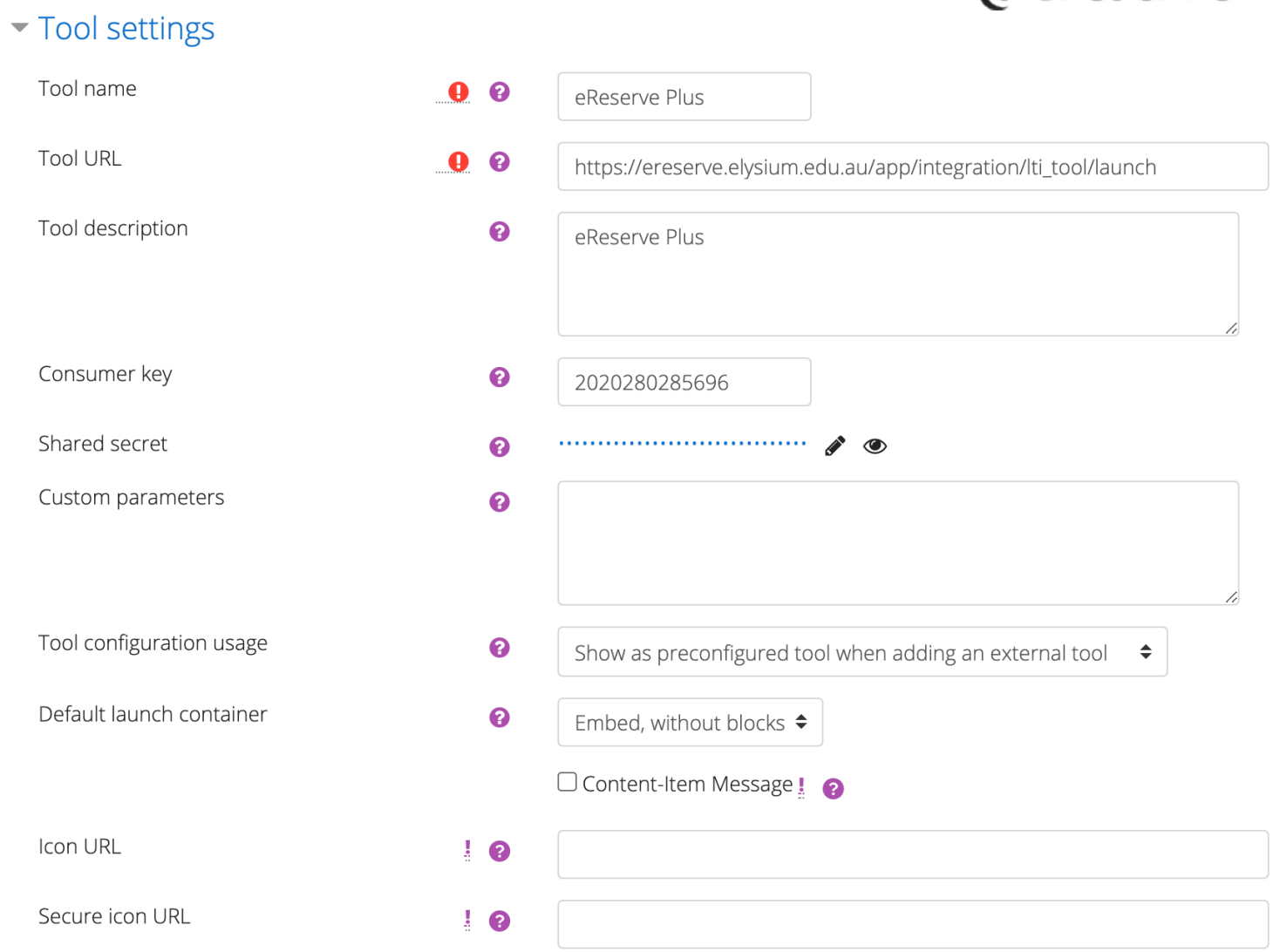


Click on the **configure a tool manually** then fill out the form as follows:

Tool Settings

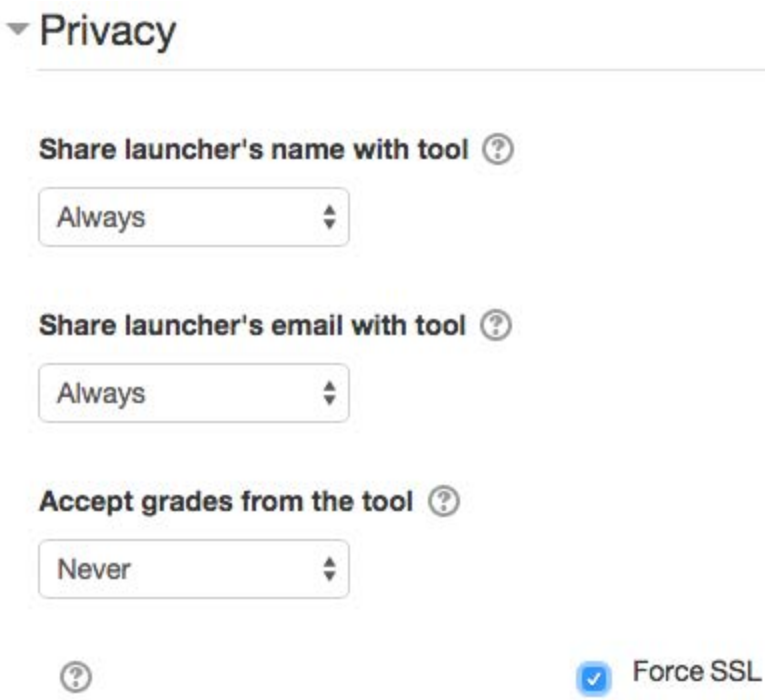
1. **Tool Name** - You can name this as you need but we recommend **eReserve Plus**
2. **Tool base URL** - This URL will be provided by the eReserve Support Team along with this document.
3. **Consumer Key** - The key in the integration record that you created earlier.
4. **Shared Secret** - The secret in the integration record that you created earlier.
5. **Launch Container** - This is how the External Tool will be displayed. Below are the options:
    - **Default** - If in doubt, leave as default;
    - **Embedded** - The External Tool will be embedded in the Moodle course page with blocks and navigation bar;
    - **Embedded without Blocks** - The External Tool will be embedded in the Moodle course page but without blocks;
    - **New Window** - The External Tool will open in a new window (A new window or tab will open with the External Tool and the old browser window containing the course page will not change.)

> **Tip:** It is our recommendation that you configure the Launch Container to be **Embedded without Blocks** as a default to ensure the Reading List size available to users is optimised.



Privacy

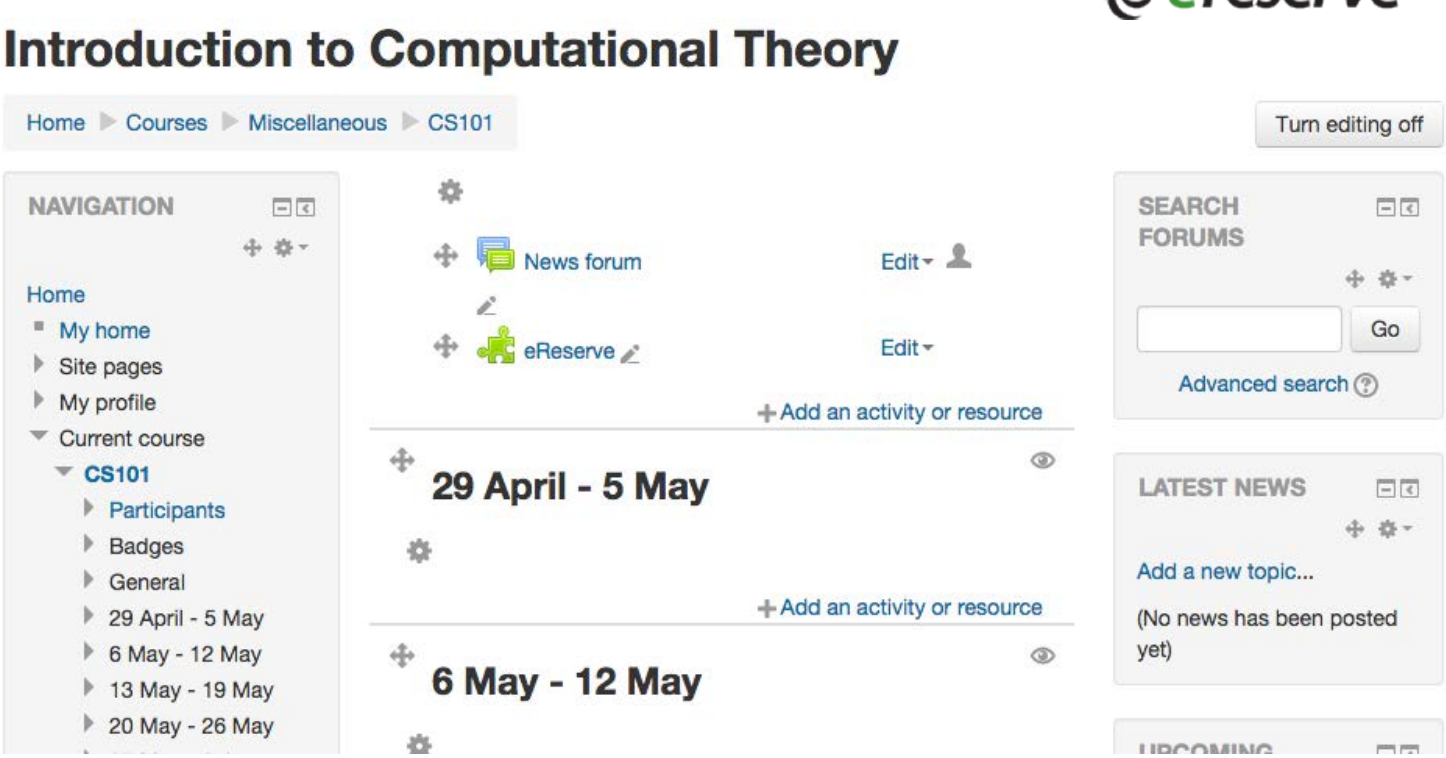
1. **Share launcher's name with tool** - This is set to **Always** for eReserve to pre-populate reading requests with a User's name.
2. **Share launcher's email with tool** - This is set to **Always** for eReserve to pre-populate reading requests with a User's email address.
3. **Force SSL** - All communication with eReserve Plus is done over SSL so this needs to be ticked.



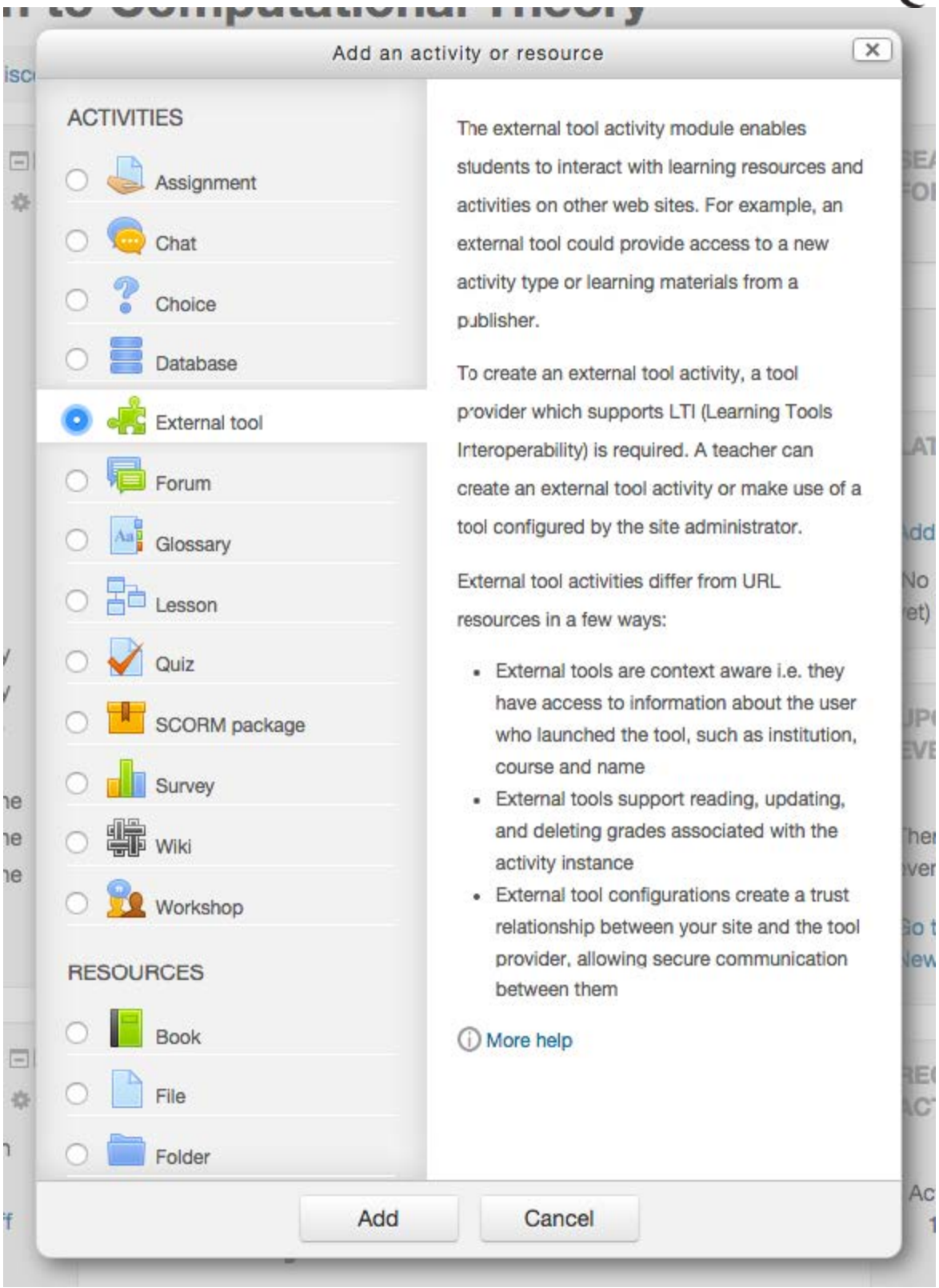
NB: eReserve Plus **does not** store Student emails or names. These settings are purely for recording reading requests from Academics.
Once you have completed the form just click on the **Save Changes** button. You're now ready to create a link in a course.

5.3 Course Link to Moodle

The LTI Tool integration in Moodle is treated as an 'Activity'. So for those who maintain the course, its just a matter of adding a new activity in an appropriate location in Moodle. Just navigate to the course in question then click on the **Turn editing on** button, if you haven't already. Once in edit mode just click on **Add activity or resource** link.

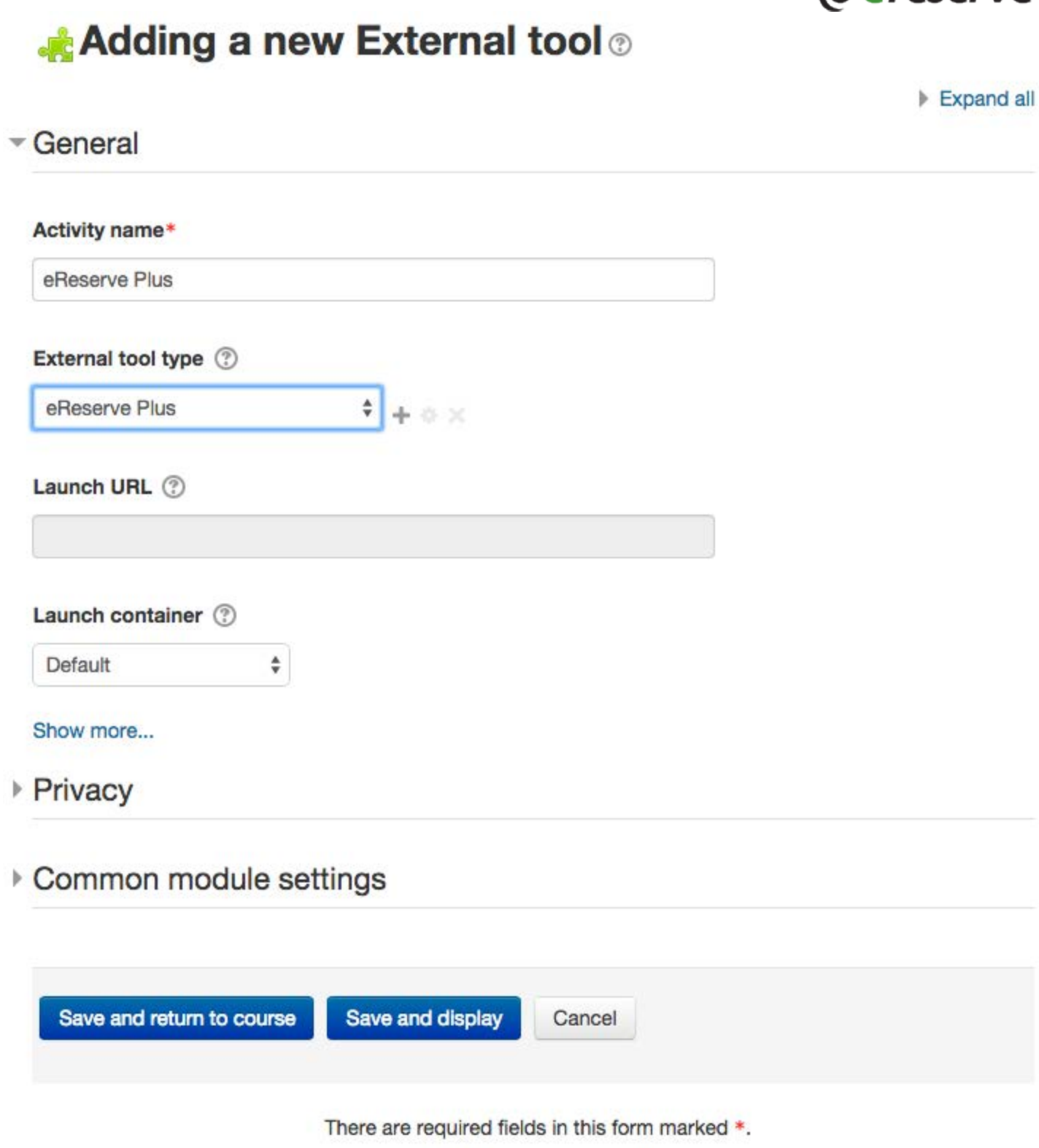


Once you've clicked on the link you'll see the **Add an activity resource** dialog displayed (see below). Choose the **External tool** option then click the **Add** button.



The **Adding a new External tool** form (see below) will be displayed. Fill it in as follows

1. **Activity Name** This name can be chosen by the course maintainer but we recommend **eReserve Plus** or **Reading List**
2. **External tool type** To use the configuration you created earlier just select the **eReserve Plus** option.

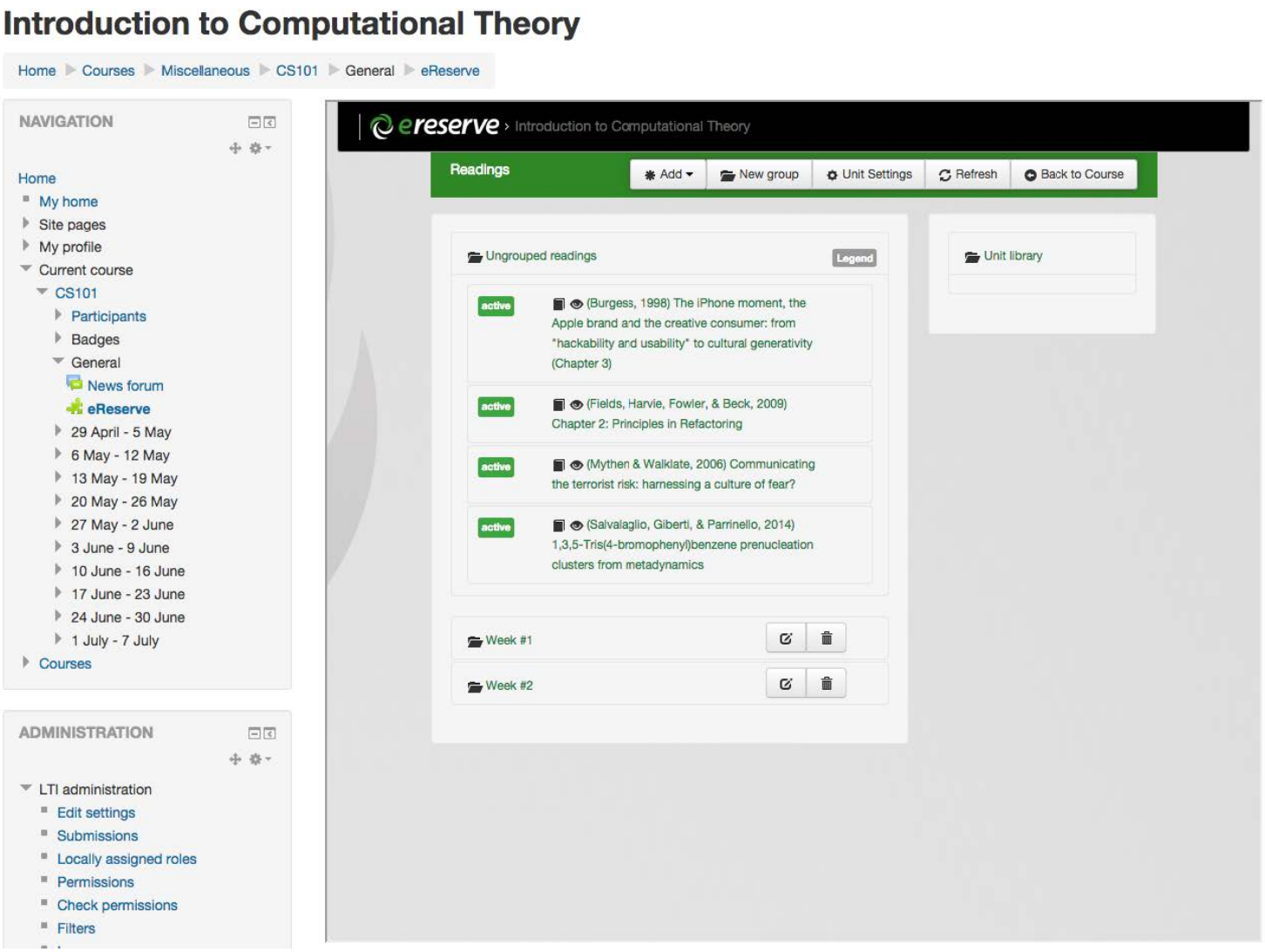


All other options can be left with their defaults. Click on **Save and return to course** and you're done. Now onto activation of your integration record.

5.4 Integration Record Activation

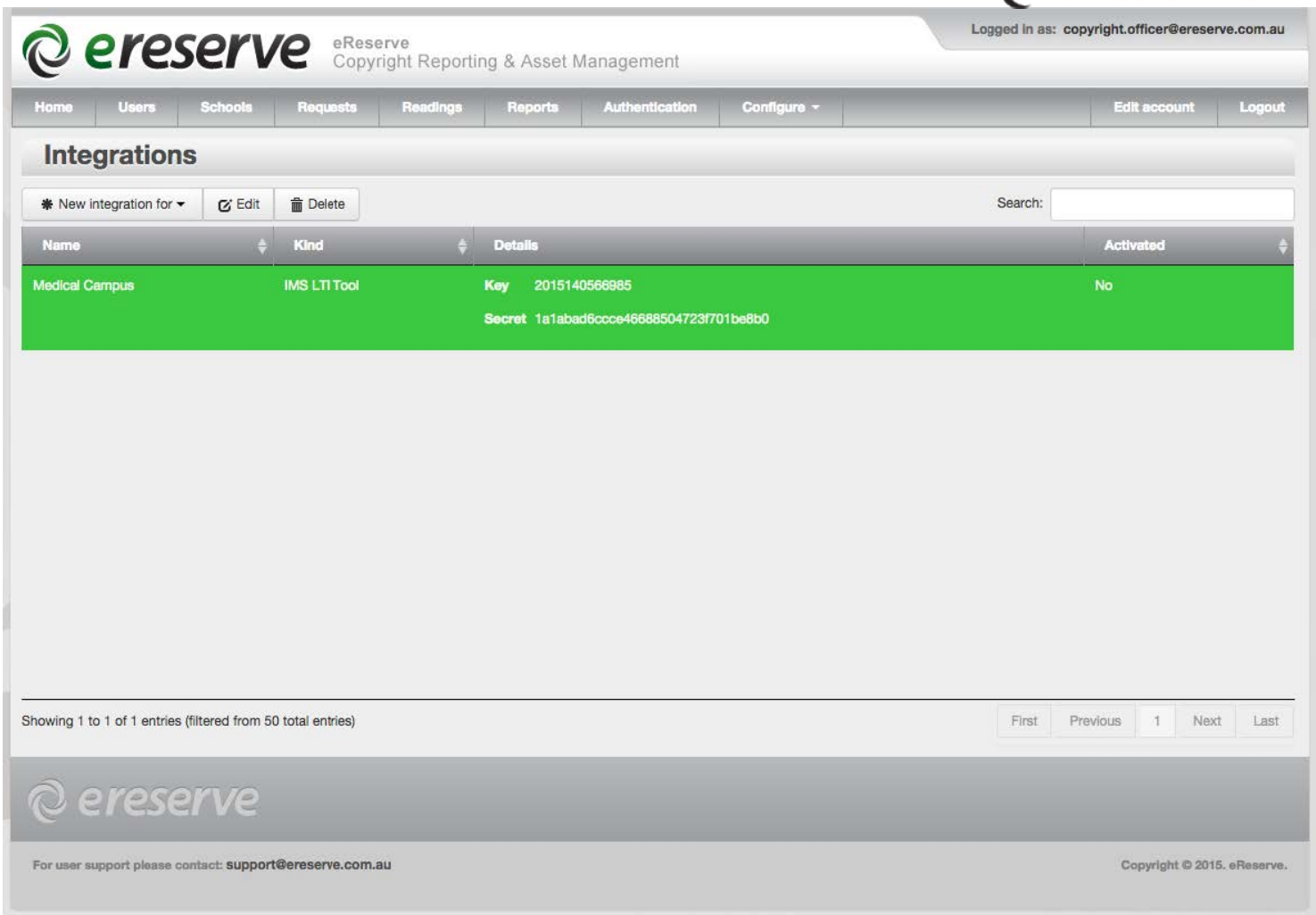
This is the final step and the most important one. It binds your Moodle Instance to the integration

record within eReserve Plus. To do this is very simple, it's just a matter of clicking on the link you created in the course. If you've chosen the **Embed** option then you'll see something like the page below for those who have access to manage the Reading List.

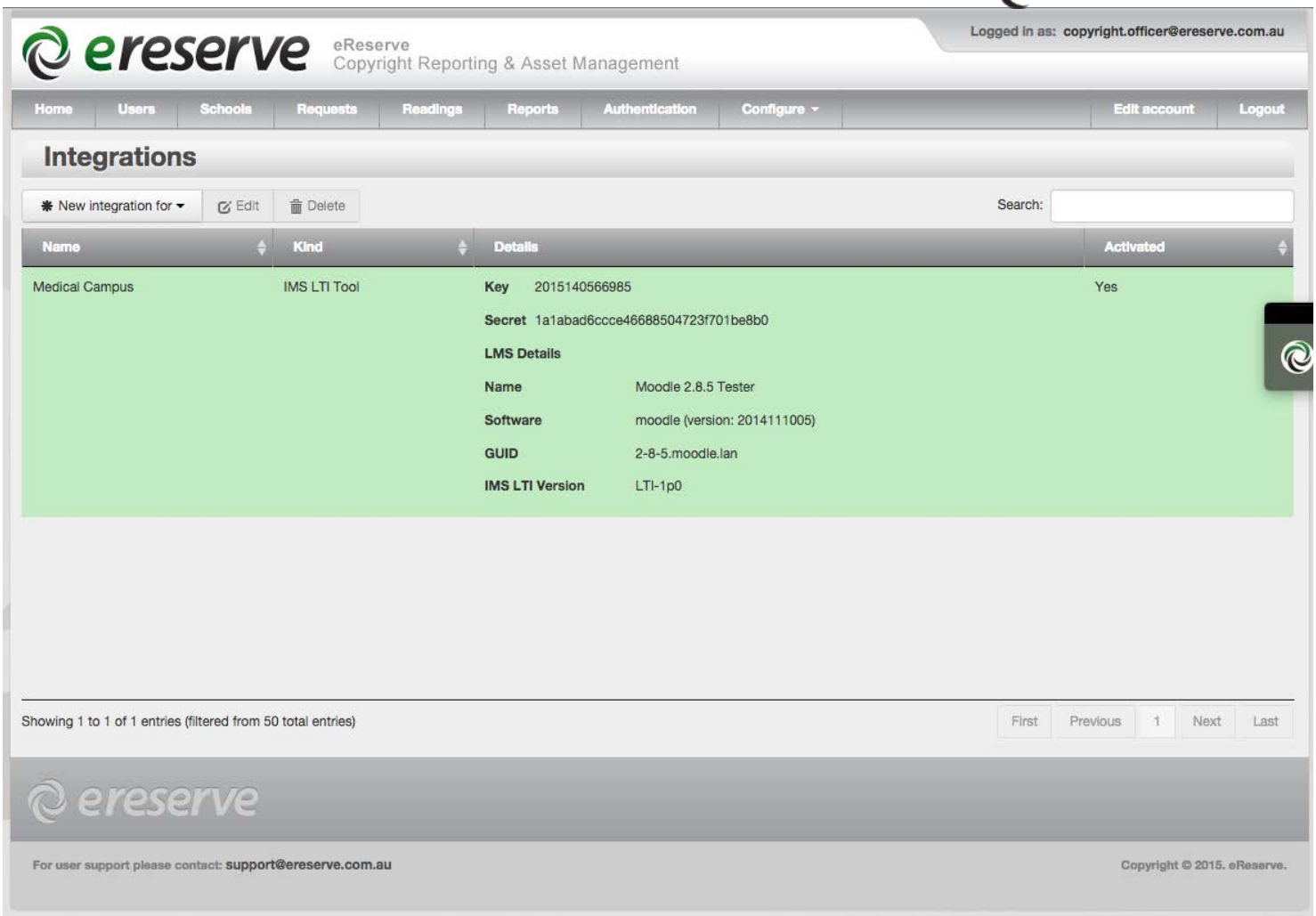


Once this has been done if you return to eReserve Plus and navigate to **Configure > Integrations** you'll note the integration record has been activated with the details of your Moodle Instance.

Before activation:



After activation:



Now that your integration record has been activated it's important to configure it correctly so please read **2.3** Reading list access management and **2.4** Reading lists and unit codes to apply your desired configuration details.

5.5 Resource Linking with Moodle

There are four plugins which make Resource Linking for Academics and Teachers possible from Moodle:

- **eReserve Plus Local Plugin**
  This plugin contains all of the core functionality for the integration between the two platforms. For the end user this is where all of the configuration is done.

- **eReserve Atto & TinyMCE Plugins**
  This plugin allows for integration with eReserve Plus. At this stage it focused on Resource Linking. To support the insertion of resource links (link to a list of one or more resources in eReserve Plus) this plugin provides a button that can be added to the Atto editor (now the default editor for Moodle) and automatically added to the TinyMCE Editor.

- **eReserve Plus Filter Plugin** This plugin will make sure that the correct details are used such as the Course ID and Reading ID when using Resource Linking.

Download the necessary installation files here

Prerequisites

To use these plugins you will need an eReserve Plus instance and Moodle 3.3.4 or later.

Installing the plugins

File Copy / Upload

To start the installation of the plugins you can use one of the two following methods:

1. File Copy
   If you have access to the file system for the target Moodle instance then you can kickstart the installation by doing a simple copy in bash:

   ```
   $ cp -rf path/to/repo/lib path/to/moodle/lib
   $ cp -rf path/to/repo/local path/to/moodle/local
   ```

2. Zip File Upload
   With this method you will need to zip each of the plugins using the following steps in bash

   ```
   $ sh build.sh
   ```

   After running the above script all of the zip files will exist in a `build` directory. You can upload the zip files via the Moodle admin interface `Administration > Plugins > Install plugins`. Once there, follow the on-screen instructions to do the installation.

Installation

After using either of the above methods to get the files onto your Moodle instance it's just a matter of visiting the Moodle administration page and Moodle will detect that the plugins need to be installed. Follow the instructions laid out by Moodle providing the settings, which are detailed in the `Settings` section of this document.

Atto Editor Post Installation

In order to have the eReserve Plus Resource Link button in the Atto Editor you will need to manually add it via the Moodle administration. Navigate to `Administration > Plugins > Text editors > Atto HTML editor > Atto toolbar settings`.
Once on the page scroll down to the `Toolbar config` then place `ereserve` in where you want the button to appear. Following is an example configuration (note `ereserve` on the `files` line of the config):

```
collapse = collapse
style1 = title, bold, italic
list = unorderedlist, orderedlist
links = link
files = image, media, managefiles, ereserve
style2 = underline, strike, subscript, superscript
align = align
indent = indent
insert = equation, charmap, table, clear
undo = undo
accessibility = accessibilitychecker, accessibilityhelper
other = html
```

Filter Plugin Post Installation

Once the filter plugin has been installed you will need to enable the filter. This can be done in the Moodle Site Administration using the following steps:

1. Login as an administrator
2. Navigate to `Site administration > Plugins > Filters > Manage filters`
3. Locate the `eReserve Plus Filter` then change `Active?` to `On`
4. Move the `eReserve Plus Filter` to the bottom of the list of active filters

Settings

General Settings

- eReserve Plus Host Name -
  This setting is the fully qualified domain for your eReserve Plus instance (e.g. [ereserve].institution.edu.au). This will be supplied as part of your onboarding. NB: Please do not include the http:// or https:// portion of the URL

IMS LTI Settings

The following Consumer Key and Secret are generated in eReserve Plus by creating an integration record associated with this instance of Moodle. Creation of integration records can be done within the eReserve Plus admin interface via Configure > Integrations. For specific details please see the eReserve Plus documentation

- Consumer Key
  The **Key** from the associated integration record in eReserve Plus

- Shared Secret
  The **Secret** from the associated integration record in eReserve Plus

Canvas LMS

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

6.1 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.

6.2 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 to create an + LTI Key by selecting + Developer Keys.

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

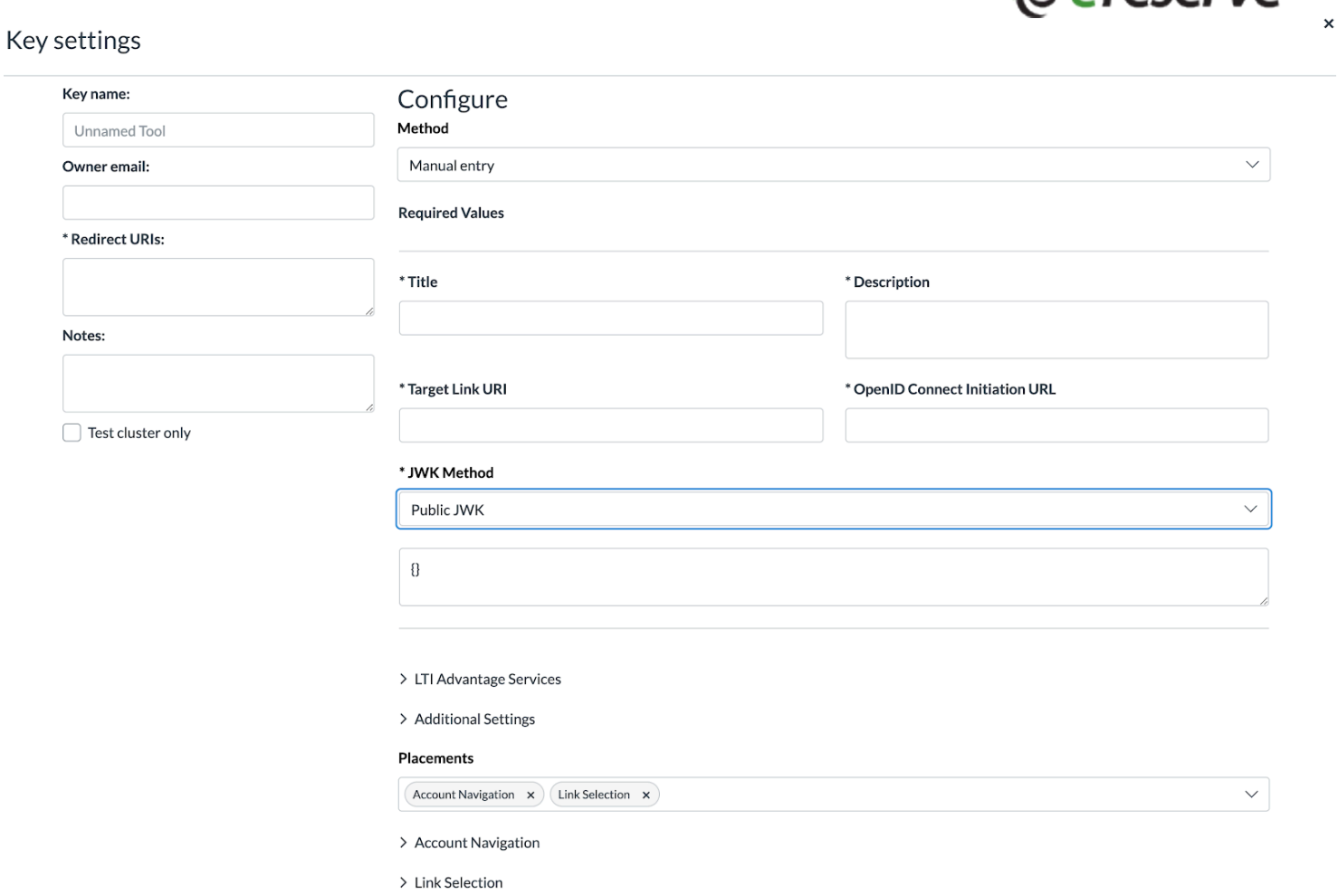


Figure 1: Creation of **Developer Key**

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:

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)

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” 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 (e.g. 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.

a. 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)

b. Copy the resulting JSON displayed on the page

c. Paste the copied JSON in the field provided for the JWK

9. Additional Settings The Privacy Level will need to be set to Public in order for the Developer Key and App to function correctly

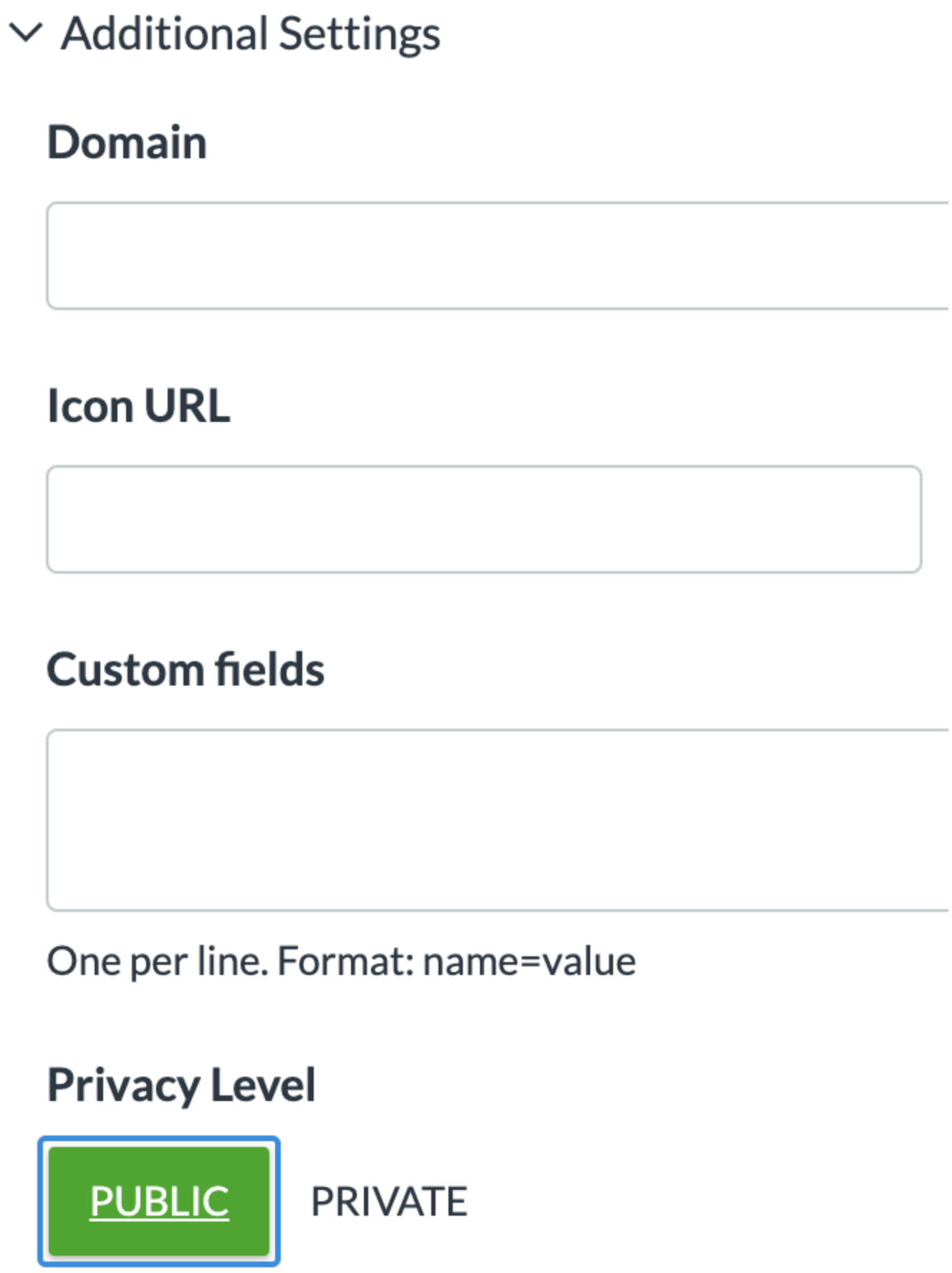


Figure 2: Privacy Level settings in the Developer Key creation

10. Placements The Course Navigation and Account Navigation placements will need to be added in order for once the Developer Key is created to be visible to users.

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

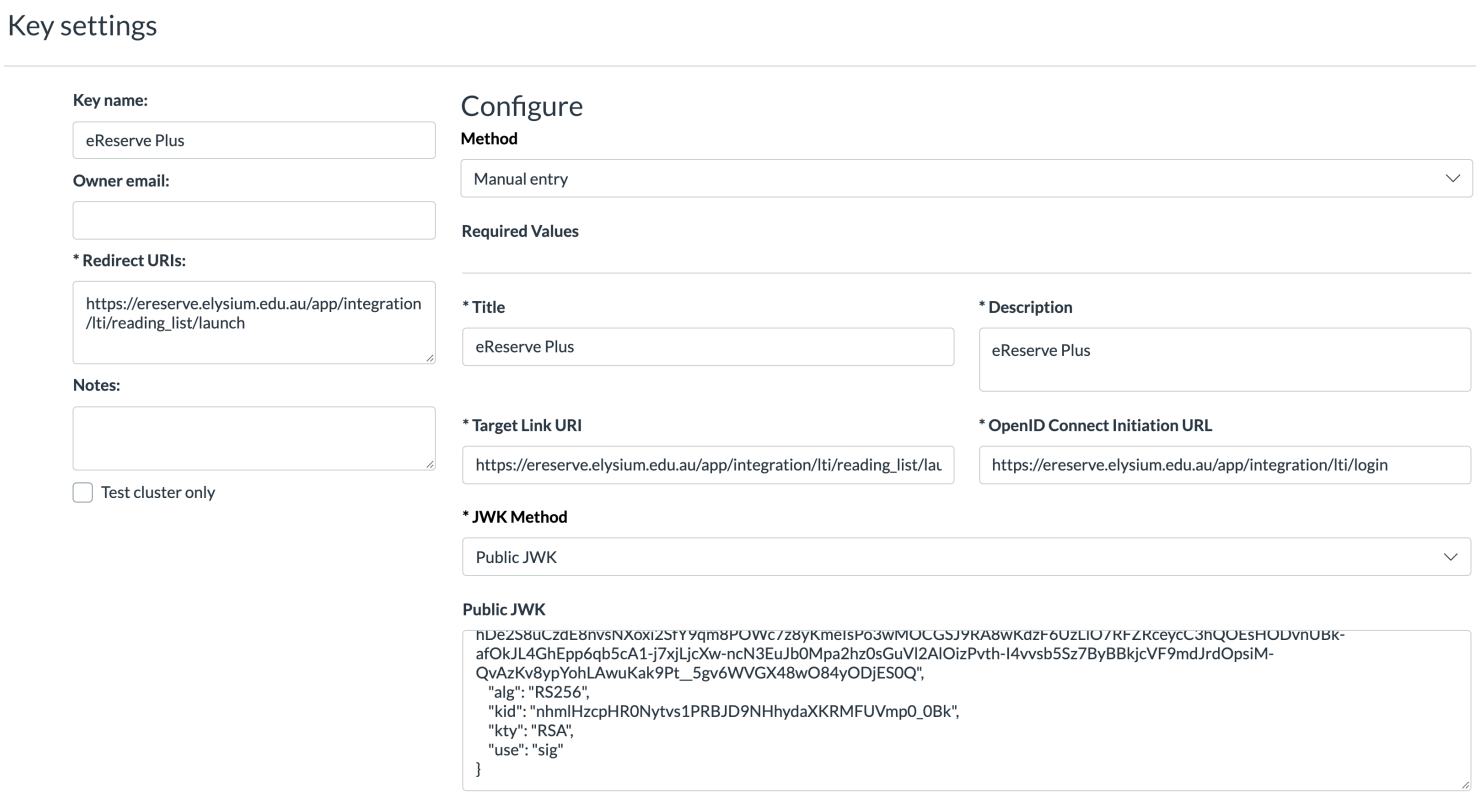


Figure 3: Developer Key with example details populated

6.3 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)

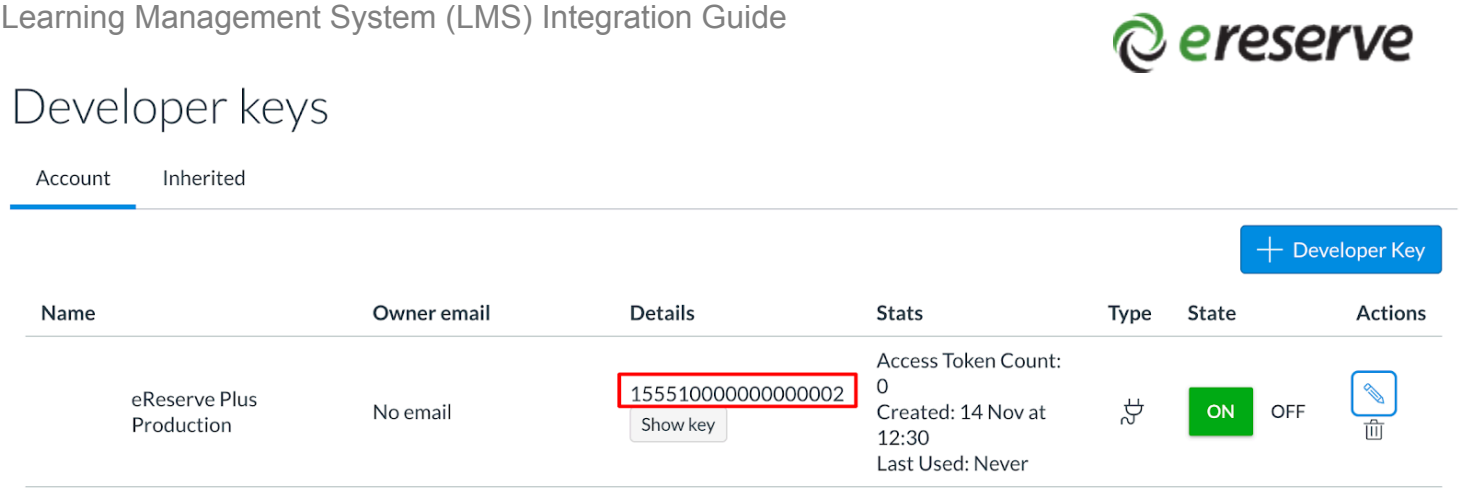


Figure 4: Developer Key - Client ID

2. App Configuration

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

3. 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 5: Adding the App by Client ID

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.

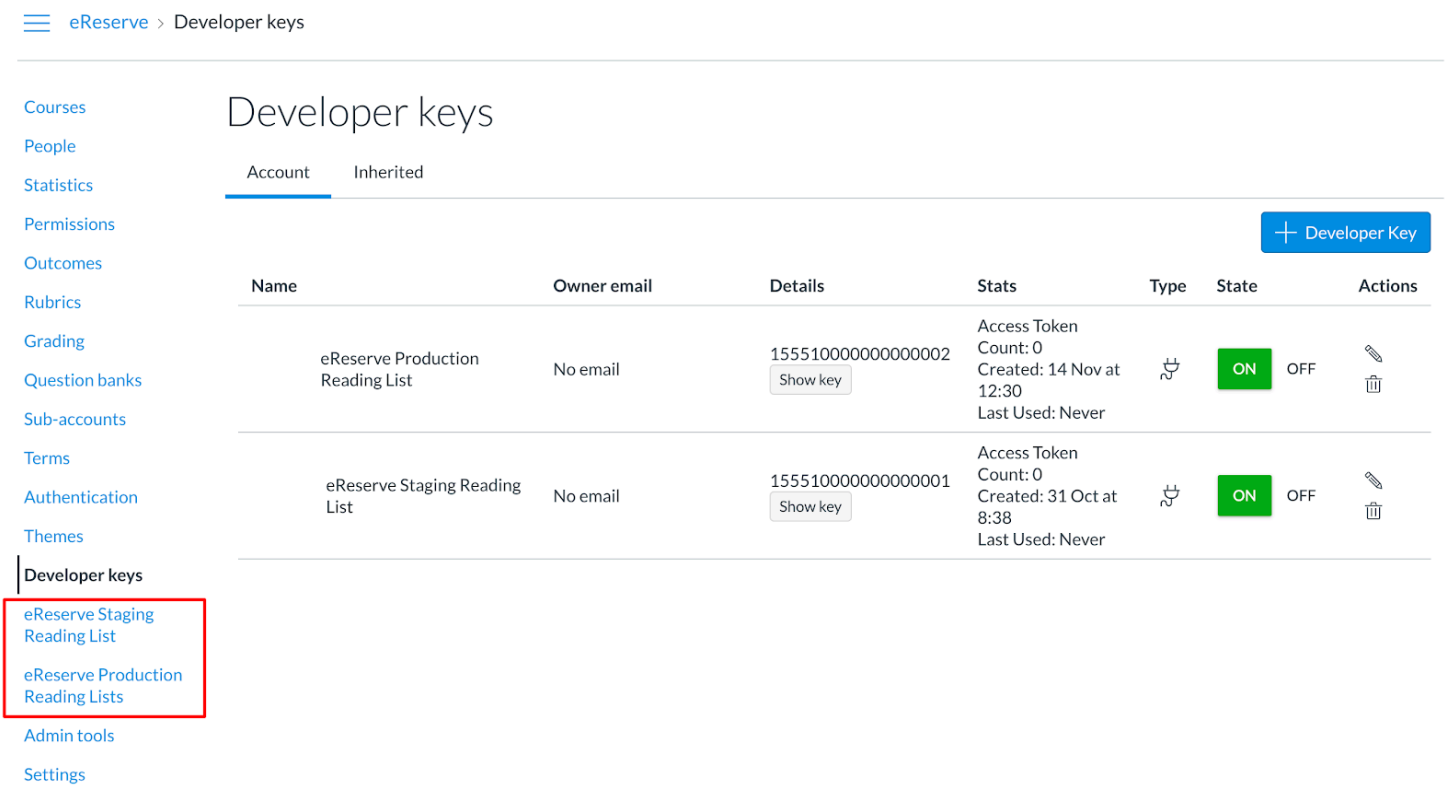


Figure 6: External Learning Tool placements

6.4 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.

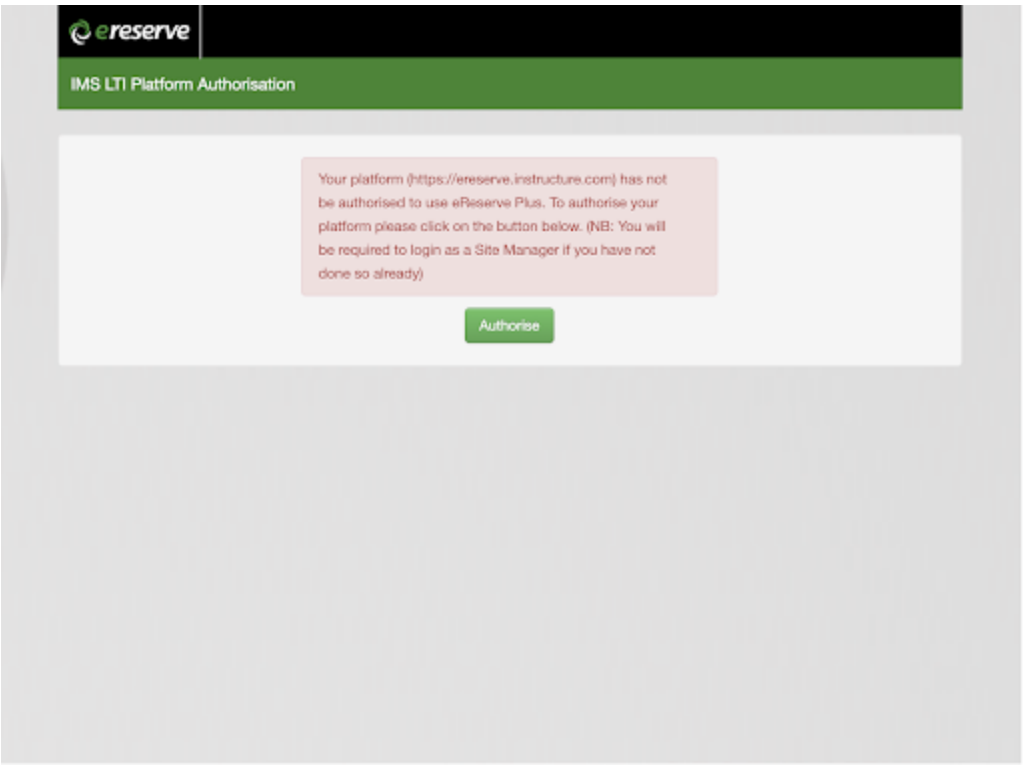


Figure 7: Platform Authorisation

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.

6.5 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.

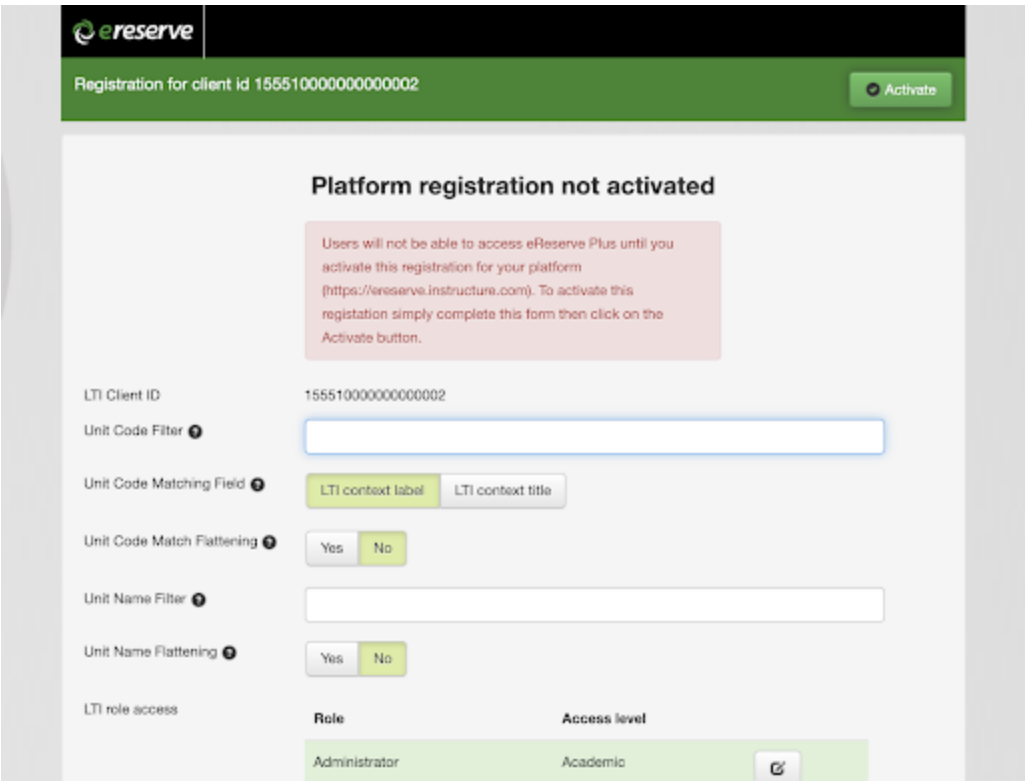


Figure 8: Platform Activation

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.

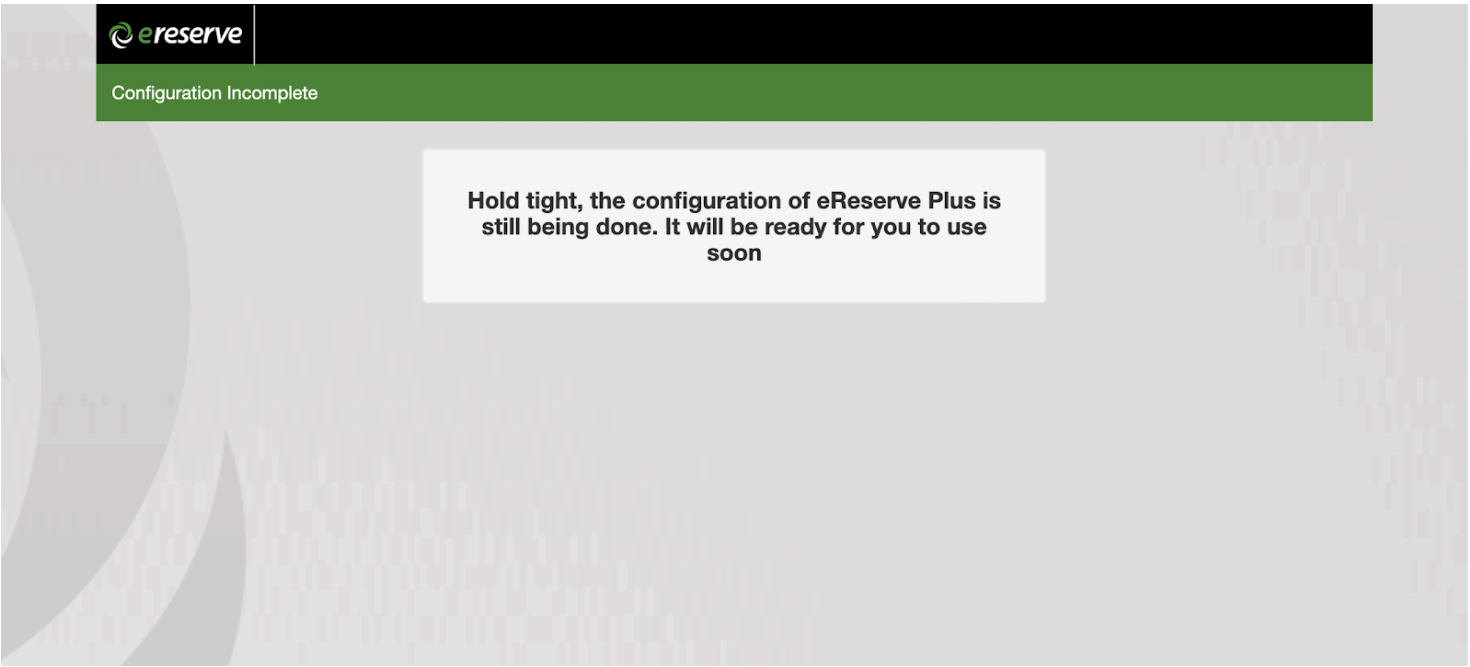


Figure 9: Academic and Student Alert of unactivated platform

6.6 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.

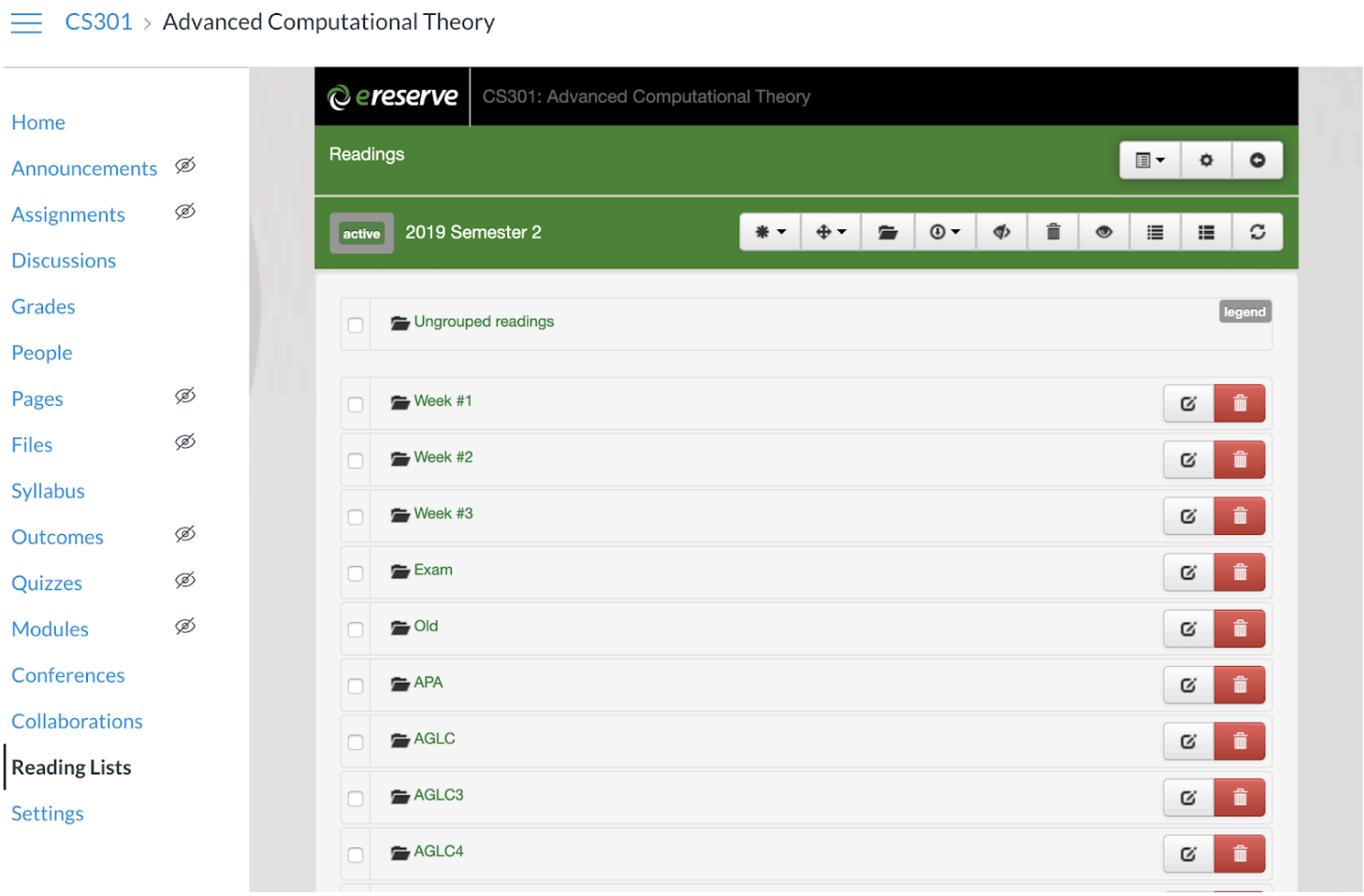


Figure 10: eReserve Plus Reading List via External Learning Tool

6.7 Editing the Registration Form

To edit the Registration form or to change details such as the Unit 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.

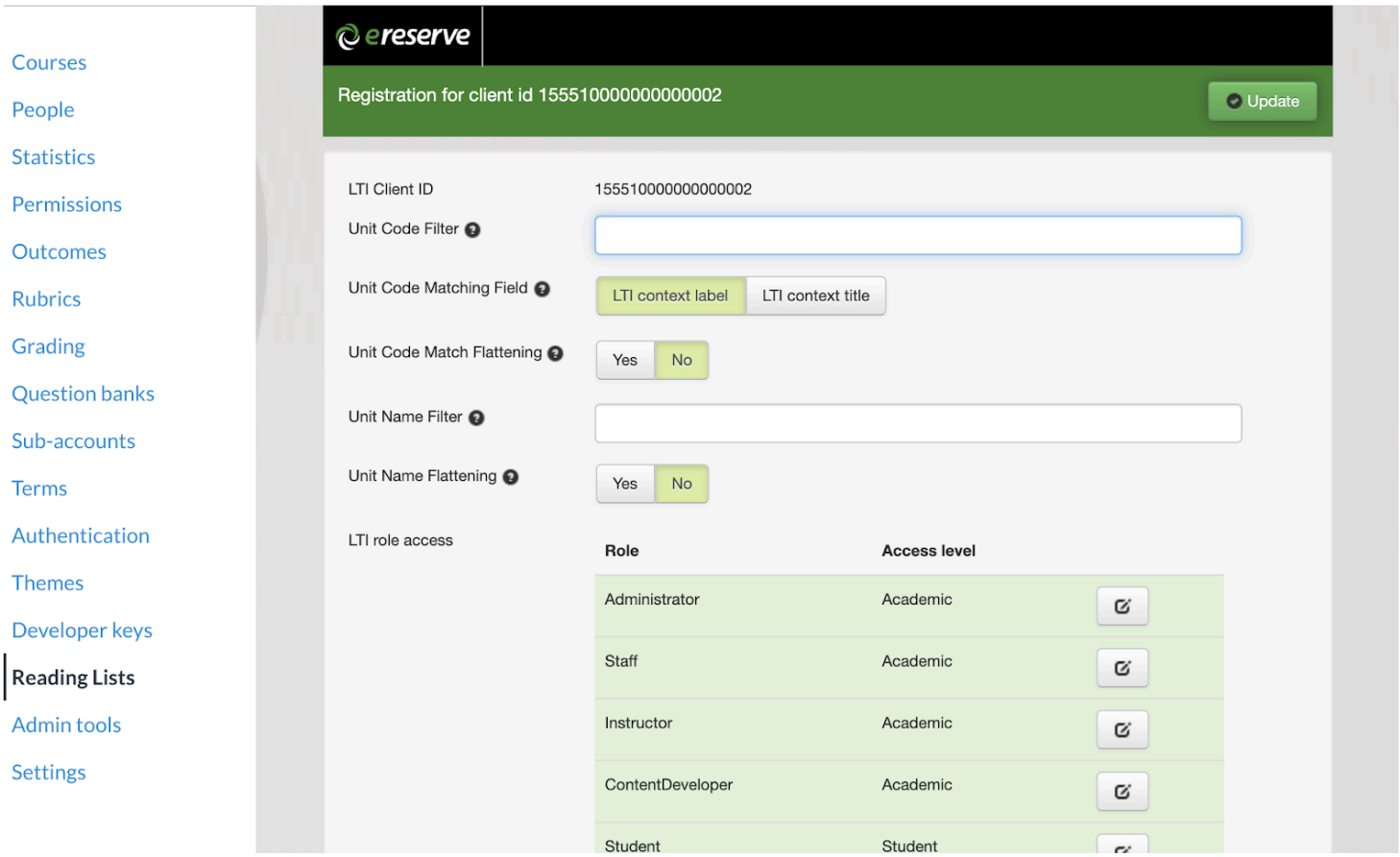


Figure 11: Editing the Registration for the Developer Key

6.8 Resource Linking with Canvas

6.8.1 Pre-requisites

The eReserve Plus Canvas Resource Linking has been tested with the LTI 1.3 Tool with the latest release of Cloud Host by Instructure.

It is expected that an LTI 1.3 Tool (Developer Key) has been created and is currently in use. If it has not, please refer to Canvas LTI 1.3 Documentation to create and setup.

6.8.2 Developer Key Amendments

The following information will be required to be changed in the Developer Key that you have created for your LTI 1.3 Tool.

Redirect URLs

In the Developer Key that has been created, there will need to be two additional URLs that are required to be added to the **Redirect URL** field, The URLs to add are as follows:

- **Production URL - Generate**
  - 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)

- **Staging URL - Generate**
  - 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” is the Domain Name and “elysium” is the institution name)

- **Production URL - Resource Link**
  - 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 URL - Resource Link**
  - 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” is the Domain Name and “elysium” is the institution name)

This will mean that in total, there should be three URLs in the Redirect URIs field. See an example in the screenshot below.

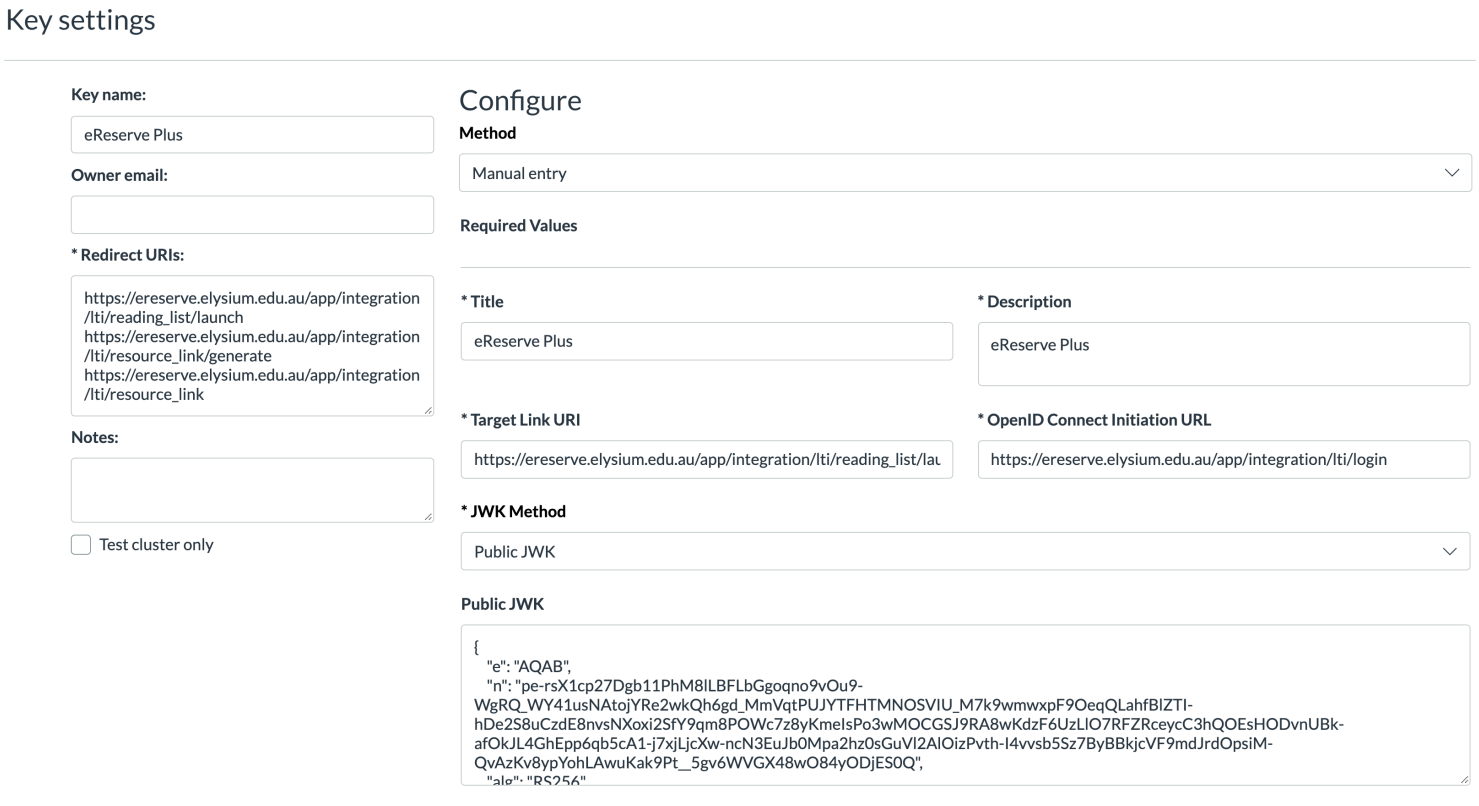


Figure 12: Developer Key with additional Redirect URLs

Additional Settings

In the **Additional Settings** section, the Domain field will need to be populated with the domain that you are currently using for your CanvasLMS.

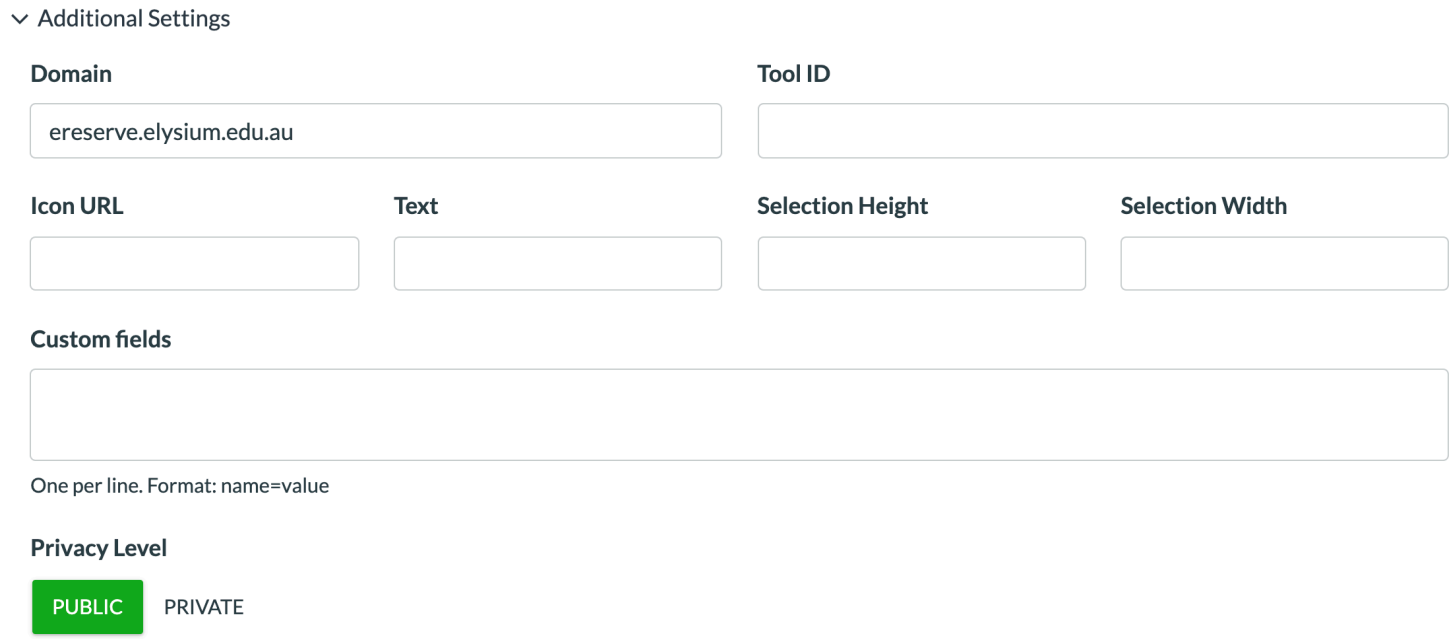


Figure 13: Additional Settings > Domain

- **Production URL - Domain**
  - https://[ereserve].institution.edu.au
  - (e.g ereserve.elysium.edu.au where “ereserve” is the Domain Name and “elysium” is the institution name)

- **Staging URL - Domain**
  - https://[ereserve]-staging.institution.edu.au
  - (e.g ereserve-staging.elysium.edu.au where “ereserve” is the Domain Name and “elysium” is the institution name)

Editor Button

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

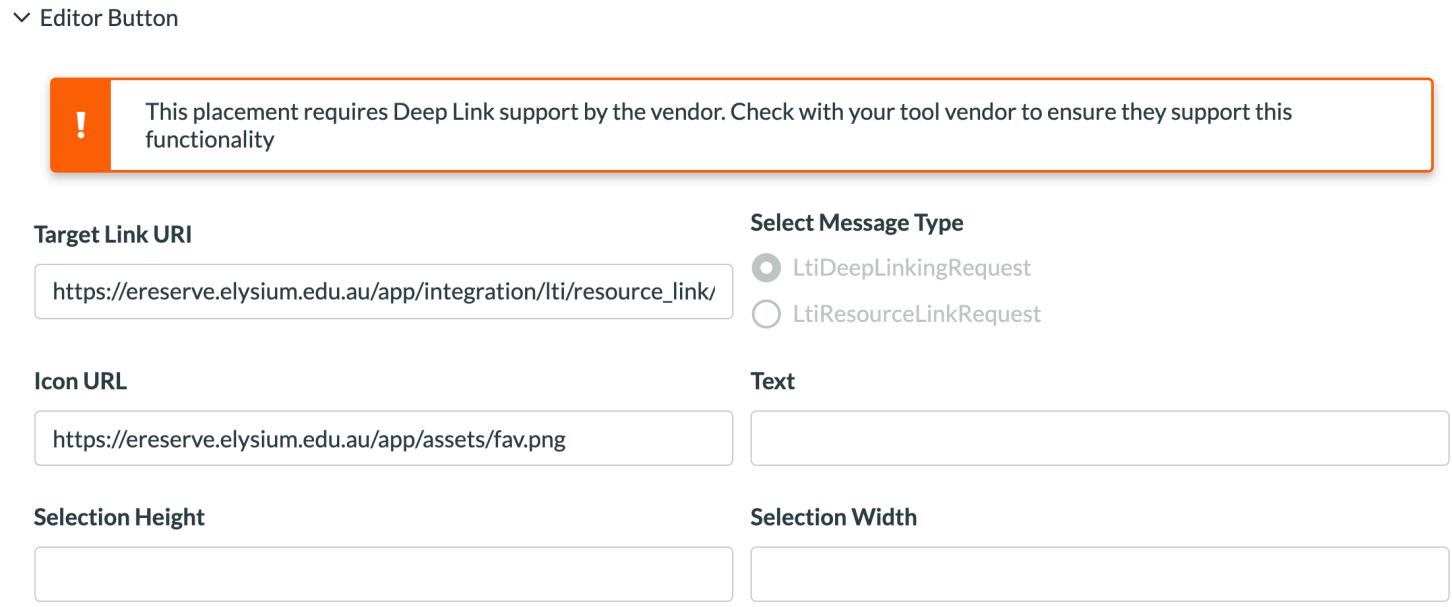


Figure 14: Editor Button details

- **Production URL - 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 eu is the institution code)

- **Production URL - Icon URL**
  - https://[ereserve].institution.edu.au/app/assets/fav.png
  - (e.g https://ereserve.elysium.edu.au/app/assets/fav.png where eu is the institution code)

- **Staging URL - 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 eu is the institution code)

- **Staging URL - 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 eu is the institution code)

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 Feature Guidance documentation.