

YOUR FIRST TOOL INTEGRATION WITH BASIC LEARNING TOOLS INTEROPERABILITY (BASIC LTI)

Serves: Administrators

Integrating third party or custom tools into Learning Environment using Basic LTI is a straightforward process with immediate results. Once you have set up everything in your environment, adding new tools or trying different configurations is easy. This recipe will make sure you have all the necessary preparations in your environment to get started.

Benefits:

- Straightforward integrations with third party tools, or tools you build in-house
- Employs a standards based approach to allow for a more user friendly process flow
- Compatible with a continually growing, large list of teaching and learning tools in the market

WHAT YOU WILL NEED



Requires your institution to have Learning Environment 8.4.2 or higher

Note: This document is written based on version 9.4.1. Options may appear differently in previous versions.

External tools that supports Basic LTI version 1.0

A URL, Key and Secret from the Basic LTI tool vendor

SECTIONS IN THIS RECIPE



Basic LTI overview

Set up permissions

Set up IMS Mappings for roles and org units

Create a link in a course

Preview request details

Incorporate links into courses

Other ideas to consider trying

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BASIC LTI OVERVIEW

Learning Tools Interoperability (LTI) enables tool consumers, primarily learning management systems, to connect and transfer information to tool providers. Tool providers consist of commercial tools vendors or institutions that write and host tools for eLearning. Examples include wikis, simulations or protected content.

LTI, as a standard from IMS Global Learning Consortium, allows users to access external learning tools from their courses without logging into the tool itself.

For more information about IMS Basic LTI, refer to the whitepaper below:

http://www.desire2learn.com/resource/docs/wp/Desire2Learn_whitepaper_IMS_Basic_LTI.pdf

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SET UP PERMISSIONS

For Basic LTI/ External Learning Tools, there are two sets of permissions you should set from Roles and Permissions to access Learning Environment tools:

External Learning Tools permissions

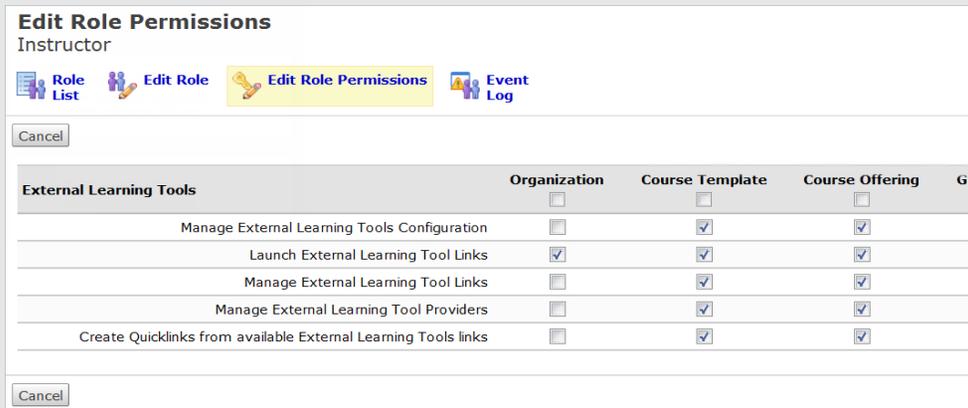
The following are the permissions you can configure under this category:

- Managing configurations
- Launching links
- Managing links
- Creating quicklinks to links
- Managing tools providers

IMS Mapping permissions

The only Organization-level permission is the Manage IMS Configuration option. This is used for mapping IMS roles and context types to your system's roles and org unit types.

This permission is usually only given to administrators.



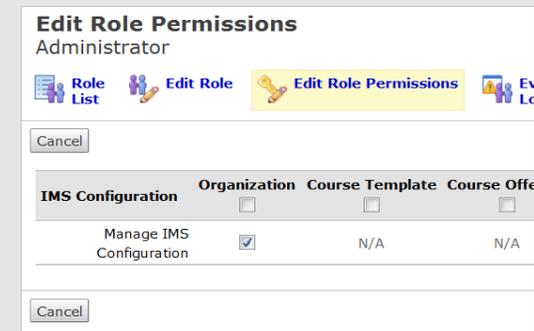
Edit Role Permissions
Instructor

Role List Edit Role Edit Role Permissions Event Log

Cancel

External Learning Tools	Organization	Course Template	Course Offering	Gr...
Manage External Learning Tools Configuration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Launch External Learning Tool Links	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Manage External Learning Tool Links	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Manage External Learning Tool Providers	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Create Quicklinks from available External Learning Tools links	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Cancel



Edit Role Permissions
Administrator

Role List Edit Role Edit Role Permissions Event Log

Cancel

IMS Configuration	Organization	Course Template	Course Offering
Manage IMS Configuration	<input checked="" type="checkbox"/>	N/A	N/A

Cancel

Administrators are typically given all permissions at each level.

Instructors, at a minimum, should have rights to create quicklinks from courses and launch tools anywhere.

Students are not granted rights besides the ability to launch tools from anywhere.

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SET UP IMS MAPPINGS FOR ROLES AND ORG UNITS

IMS Global has a few standard user roles and context (org unit) types. As these standard names need to be sent with Basic LTI launch requests, you must map your system's roles to IMS roles, and your org unit types to IMS contexts.

Use the checkboxes from the IMS Configuration tool, accessed through the My Admin Tools widget, to set up the mappings.

When doing so, use the following best practices as a basic template. You can always modify it according to the tools you are integrating:

- Have a 1:1 mapping for org unit types
- Map/connect
 - Student roles to the Learner and Student options
 - Instructor roles to the Instructor option
 - Administrator roles to the Instructor and Administrator options
 - Course offering org unit type to the Course Offering option

IMS Configuration Areas

- Roles
- Org Unit Types**

Instructions

- Column titles identify IMS-defined context types, and row titles identify org unit types configured for this organization.

Org Unit Type Mappings

Save

Org Unit Types	CourseTemplate	CourseOffering	CourseSection	Group
Semester	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Course Template	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Course Offering	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Group	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Section	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Department	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

IMS Configuration Areas

- Roles**
- Org Unit Types

Instructions

- Column titles

Role Mappings

Roles

Roles	Student	Faculty	Member	Learner	Instructor	Mer
Administrator	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Instructor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Student	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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CREATE A LINK IN A COURSE

The easiest way to start sharing links is to create one from within a course. Access the External Learning Tools option through one of two channels: the Edit Course Link or the My Admin Tools widget on the course homepage.

When setting up a new link, here are a few reminders to note for the various sections of the New Link page:

Properties:

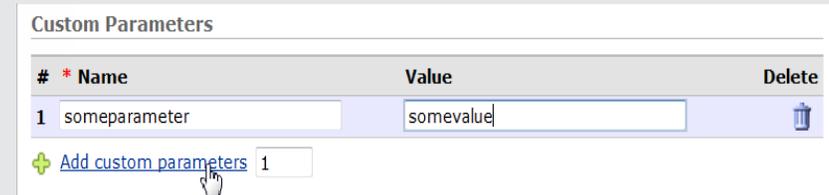
- Name your link in the Title field
- Enter the URL provided by the vendor of the tool



The 'New Link' form includes a 'Link List' button and a 'New Link' button. Below these are 'Cancel' and 'Save' buttons. The 'Properties' section contains two fields: 'Title' with the value 'Some Tool' and 'URL' with the value 'http://some.tool.com/somepage.php'.

Custom Parameters:

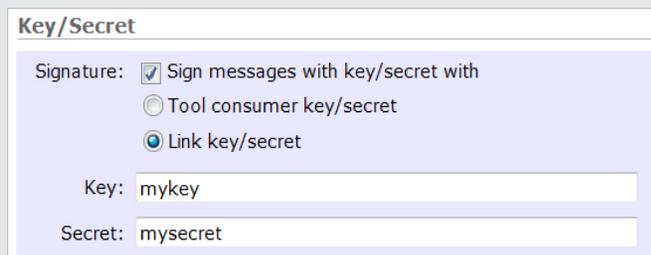
- If you need to send custom parameters, enter them one at a time
- Save after each entry



#	* Name	Value	Delete
1	someparameter	somevalue	
+ Add custom parameters <input type="text" value="1"/>			

Key/Secret:

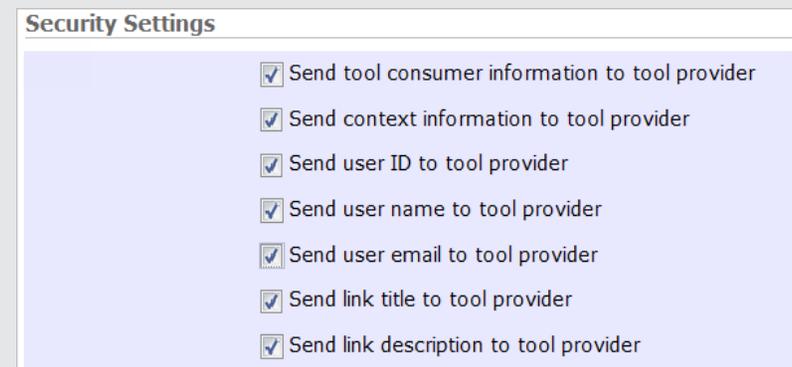
- To ensure that the link is configured properly with your key and secret, select the Link key/secret option
- The tool vendor should have provided you with a key and secret



The 'Key/Secret' form has a 'Signature' section with three radio buttons: 'Sign messages with key/secret with' (checked), 'Tool consumer key/secret', and 'Link key/secret'. Below are 'Key' and 'Secret' text input fields with values 'mykey' and 'mysecret' respectively.

Security Settings:

- Select all the options to send all available information to the external tool
- Afterwards, you can clear the boxes if what you sent is not required by the tool



The 'Security Settings' form contains a list of seven checkboxes, all of which are checked:

- Send tool consumer information to tool provider
- Send context information to tool provider
- Send user ID to tool provider
- Send user name to tool provider
- Send user email to tool provider
- Send link title to tool provider
- Send link description to tool provider

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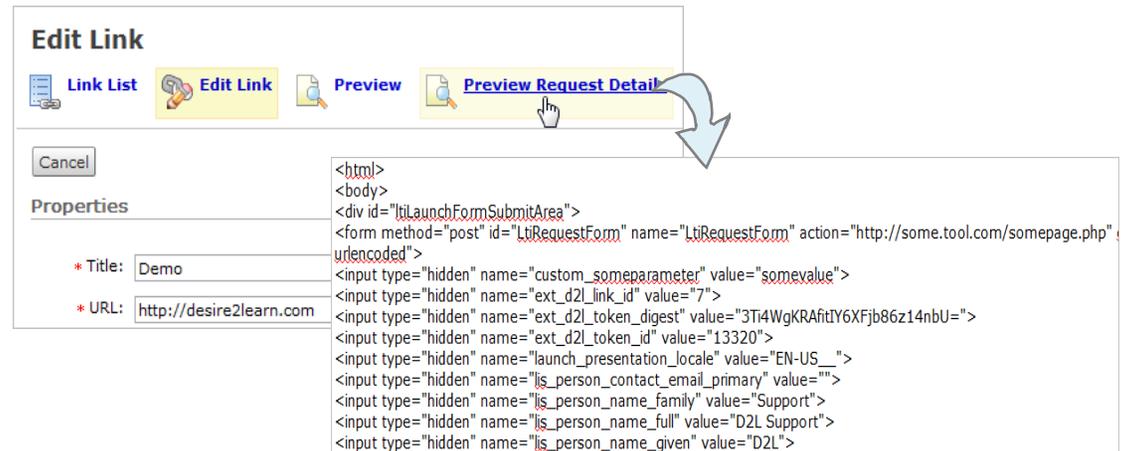
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PREVIEW REQUEST DETAILS

Use **Preview Request Details** to display all of the parameters of the Basic LTI launch. This consists of information about the user, course, system, link and encryption in HTML code format. We recommend using this functionality to verify that the information being sent to vendors is accurate or to troubleshoot issues.

The Preview option allows you to launch and access the external tool with your set parameters.

Tip: If the tool does not know who you are or what system and course you came from, verify the information in the launch request and troubleshoot the previous steps.



The screenshot shows the 'Edit Link' interface with four buttons: 'Link List', 'Edit Link', 'Preview', and 'Preview Request Details'. A blue arrow points to the 'Preview Request Details' button. Below the buttons is a 'Properties' section with 'Title: Demo' and 'URL: http://desire2learn.com'. To the right, a text area displays the following HTML code:

```
<html>
<body>
<div id="ltiLaunchFormSubmitArea">
<form method="post" id="LtiRequestForm" name="LtiRequestForm" action="http://some.tool.com/somepage.php"
urlencoded">
<input type="hidden" name="custom_somparameter" value="somevalue">
<input type="hidden" name="ext_d2l_link_id" value="7">
<input type="hidden" name="ext_d2l_token_digest" value="3Ti4WgKRAfitY6XFjb86z14nbU=">
<input type="hidden" name="ext_d2l_token_id" value="13320">
<input type="hidden" name="launch_presentation_locale" value="EN-US_">
<input type="hidden" name="lis_person_contact_email_primary" value="">
<input type="hidden" name="lis_person_name_family" value="Support">
<input type="hidden" name="lis_person_name_full" value="D2L Support">
<input type="hidden" name="lis_person_name_given" value="D2L">
```

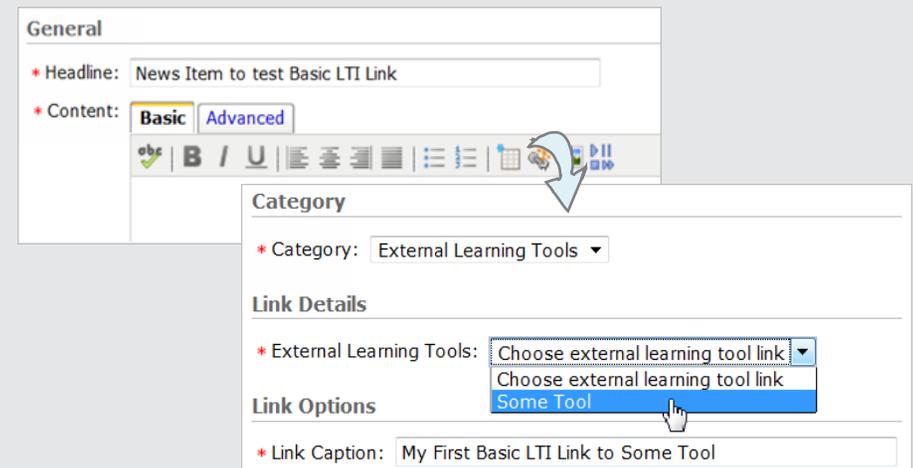
INCORPORATE LINKS INTO COURSES

Place created links into courses by inserting a quicklink through the HTML editor or by creating a Quicklink (in a News item or Discussion post, for example).

Remember three steps when creating a quicklink:

- Choose the External Learning Tools category
- The Link details is the link you created
- Add a caption before saving

Apart from Quicklinks, also try adding links to your Navbar or embed a small tool into a custom widget using an iFrame.



The screenshot shows the 'General' section of a link creation interface. The 'Headline' is 'News Item to test Basic LTI Link'. The 'Content' section has 'Basic' and 'Advanced' tabs. Below the tabs is a rich text editor toolbar. A blue arrow points to the 'Basic' tab. Below the toolbar is the 'Category' section with a dropdown menu set to 'External Learning Tools'. The 'Link Details' section has a dropdown menu for 'External Learning Tools' with options 'Choose external learning tool link', 'Choose external learning tool link', and 'Some Tool'. The 'Link Options' section has a 'Link Caption' field with the text 'My First Basic LTI Link to Some Tool'.

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OTHER IDEAS TO CONSIDER TRYING

Once you understand the basic process flow, it's easy to modify and simplify it to suit your needs. Below is a list of other ideas that you can consider trying in the future!

- Create a link at the organization level so that administration of the link is done at the org level. When shared to courses, instructors will only have to create Quicklinks.
- Create a Tool Provider Configuration if you have a vendor who wants you to create multiple links. Using URL pattern matching, this allows all the links to inherit the same key, secret and system information.
- Modify Security Settings to only send required information to the tool.

