

LAMS v1.0.2 Integration Setup Step-by-Step Guide

This page last changed on Nov 30, 2005 by Ernie Ghiglione.

Intro

If you want to integrate LAMS and an LMS without all the detailed explanation, then scroll down to the "**Quick visual walkthru LAMS Integration with other LMSs**" section.

If you want to know what you are doing and how the integration works, read all the sections in this guide.

Who should read this guide?

- Anyone that wants integrate LAMS with their existing or new:
 - Moodle 1.5+
 - .LRN 2.1.3 or 2.2
 - Sakai 2.0
 - Blackboard v6

General and System Requirements

Software:

- LAMS v1.0.2 or above (see system requirements and installation instructions)
- Any of the LMS versions mentioned above (see system requirements according to the LMS you use)
- The Moodle, .LRN, Sakai, Blackboard LAMS Module (see LAMS Integrations)

Hardware:

You can install LAMS and the LMS in the same server or on separate servers. It really depends on your setup, the size of the classes you have, the concurrency of users, size of the server, etc. If you need general advice on this, ask in the Tech forum in the LAMS Community.

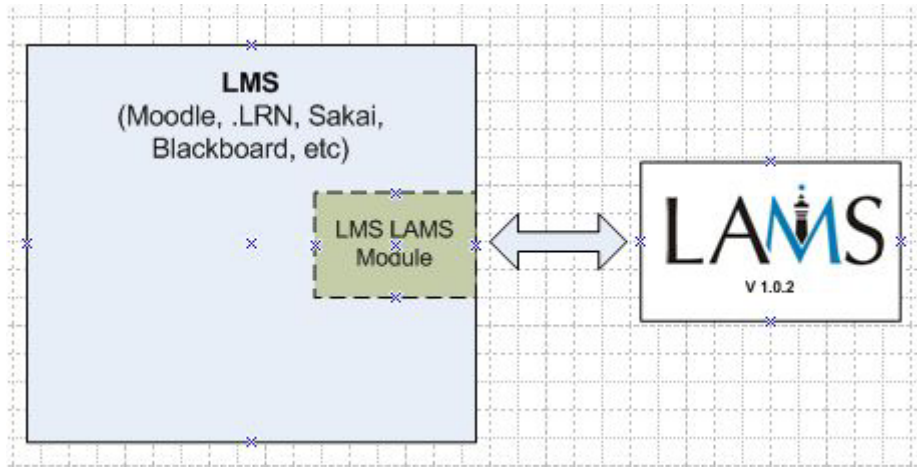
Network setup:

If you are installing LAMS and the LMS in two separate physical machines, you need to ensure that from both server you can make http calls on port 80 since the two servers "talk" to each other over webservice.

How does LAMS work with these LMSs?

The integration has been designed in a way that you only need to maintain your existing LMS. Once you integrate LAMS with your favorite LMS, LAMS will become a pseudo slave of your LMS and little to no maintenance is required on the LAMS side.

General overview



The LAMS-LMS integration is quite straight forward. In all cases we have developed a small connecting module in the LMS that acts as a bridge between the LMS and LAMS. This LMS LAMS Module will have to be installed in the LMS if you want to integrate it with LAMS.

This LMS integration modules are mainly responsible for the following:

1. Work as liason between the LMS and LAMS
2. Call the LAMS webservice to get information about sequences and classes
3. Provide interface for LAMS Monitor and Authoring
4. Provide the authentication for LAMS (using a hash generated on-the-fly)
5. Provide an interface for LAMS to get basic information about users (username, first name and last name)
6. Behaves in the LMS just like any other LMS' tool (deploys, admin, display, etc - according to the functions available in each LMS)

Getting LAMS and the LMS to communicate

As you can see in the graph above, there's communication bothways between LAMS and the LMS. So both have to be configured to "connect" to each other.

On the LMS Side, the LMS LAMS Module needs the following:

- A server_id
- A server_key (**which you need to ensure you keep private and secure**)
- The URL where the LAMS server is install

That's it!

On the LAMS side you need to:

- Login in LAMS as system administrator (the user you use when installed LAMS) and create a new **top level organization** and get the organization id.
- Then insert **manually** on the LAMS database the integration record containing the organization id you just created, the server_id, server_key, a prefix for the users and the user information callback URL.

Quick visual walkthru LAMS Integration with other LMSs

Here are the steps you need to take to get LAMS and your LMS (in this case Moodle) to be integrated. Just to illustrate this example, we are going to use the following info:

Our LAMS server is: **lams.mq.edu.au**

Our Moodle server is: **moodle.mq.edu.au**

lams.mq.edu.au has installed LAMS in port 80.

moodle.mq.edu.au has installed Moodle 1.5.x and has the Moodle LAMS moduled installed.

OK, now let's get it on with the integration:

In the LAMS side

1. login in LAMS as a sysadmin (the user that you created at installation time)



2. Click on the "**Admin**" button and then select the "**Sys Admin**" option



3. Add a new top level organisation

The screenshot shows a web browser window titled "User Management System Administration" with the URL "http://lamsmoodle.melcoe.mq.edu.au/lams/sysa". The page header includes the LAMS logo and version "LAMS 1.0.2 (20050923)" and the word "Administration". The main heading is "Lams User Administration: System Administration". Below this, a paragraph explains that these screens are for setting up new home organisations, session organisations, and staff members. The page is divided into two main sections: "Create Users and Maintain Account Organisations" and "Maintain Session Classes".

- Create Users and Maintain Account Organisations**

All users must belong to a "home organisation". When you want to create a user, go to their home organisation and create the user. If a user should belong to more than one organisation, then they need to be created in one as their home, and then be granted rights to other organisations.

Only learners can be added to a home organisation using the normal user administration screens. To create staff or administrator level users, you will need to these screens.

Your Organisations (Highest Level):

Buttons: All Organisations, LAMS Testing, dotim, dotim22, elche, kiwis, lamsmoodle, Add new top level organisation
- Maintain Session Classes**

To run a Lams Learning session with a group of learners, a Session class needs to be created. A Session Class contains all the participants of a Lams learning session, including all the learners plus at least one staff member to start and monitor the session.

Usually a staff member who will be running a session will create the session class, rather than than user administrator. (Note: you can only the session classes to which you to which have been granted modification access.)

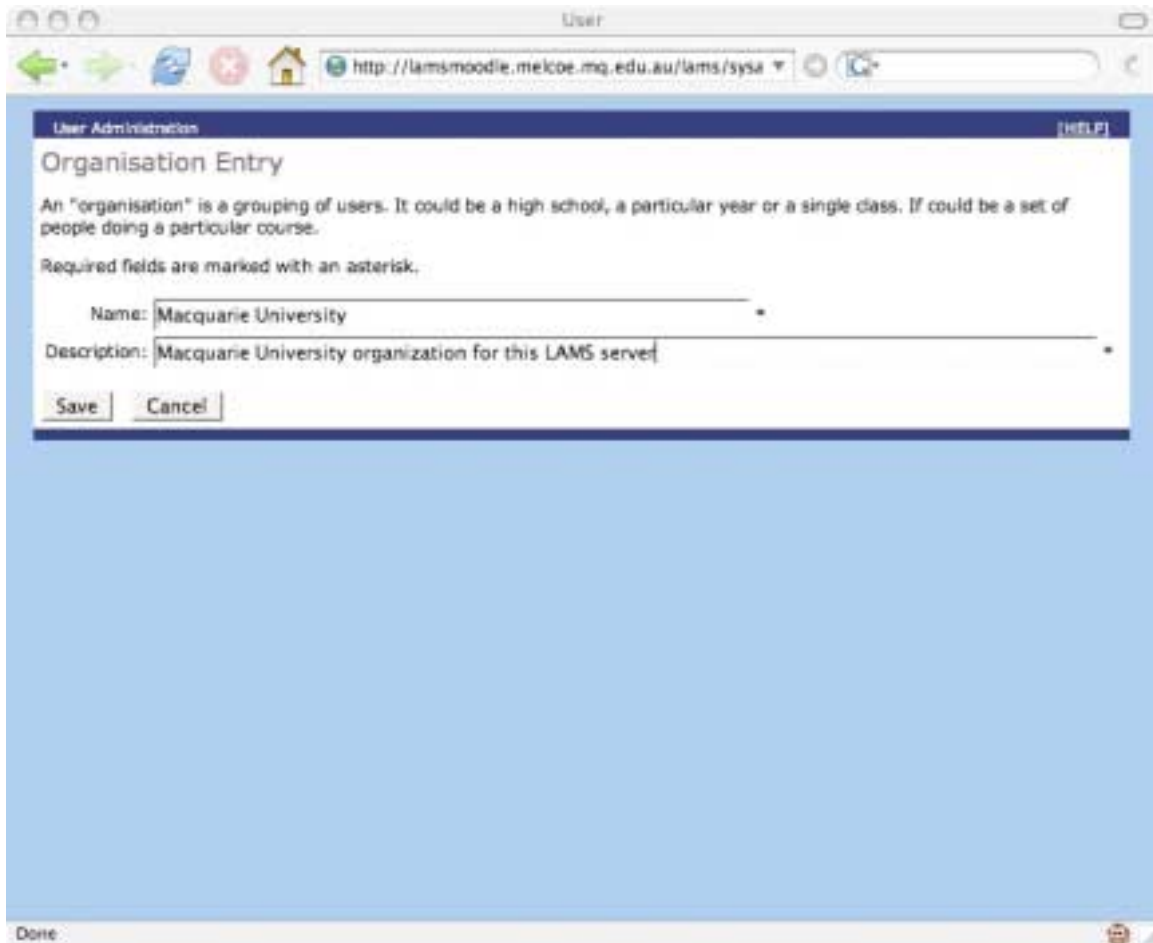
Your Session classes:

Buttons: Add New Session Class

3rd Party Class for course:12 on server:elche	3rd Party Class for course:13 on server:elche
3rd Party Class for course:14 on server:elche	3rd Party Class for course:2 on server:kiwi
3rd Party Class for course:2040 on server:dotim	3rd Party Class for course:2082 on server:dotim

Done

4. Add the name and description for the organisation you are creating



The screenshot shows a web browser window titled 'User' with the URL 'http://lamsmoodle.melcoe.mq.edu.au/lams/sysa'. The page content is titled 'User Administration' and 'Organisation Entry'. It includes a brief definition of an organisation and a note that required fields are marked with an asterisk. Two text input fields are present: 'Name' with the value 'Macquarie University' and 'Description' with the value 'Macquarie University organization for this LAMS server'. Below the fields are 'Save' and 'Cancel' buttons. The browser's status bar at the bottom shows 'Done'.

5. Now we need to get a bit under the hood and insert some values into the LAMS MySQL database **manually**. See the bold letters in the following

```
ernieg@lamsmoodle:~$ mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 6708 to server version: 4.1.10a-Debian_2-log
```

Type 'help;' or '\h' for help. Type '\c' to clear the buffer.

```
mysql> use lams
Database changed
```

```
mysql> select sid, name from u_organisation;
```

sid	name
1	All Organisations
2	Demo Org
3	DemoClass
1030	Macquarie University

Now, remember the sid for the organization we just created "**Macquarie University**" as we will use shortly. Then, let's insert the integration record into the LAMS external integration table:

```
mysql> insert into ext_server_org_map
(serverid, serverkey, servername, serverdesc, prefix, orgid) values
('lamsserver01', 'secretkey2005', 'Macquarie Uni server',
'Server using Moodle installed in this and that location. Contact Random Striker at
9850-9070',
'mq', '1030');
```

Note the following values in the insert sql statement:

- **serverid**: this is the server identification string that we will use to individually identify the LMS server that will be "talking" to LAMS.
- **serverkey**: this is the secret key that both systems will be used to encrypt the hash when doing authentication. **Make sure you keep your server key private**
- **servername**: the server name
- **serverdesc**: a meaningful server description
- **prefix**: the prefix that the usernames will have in LAMS. (usually just one or two letters will do)
- **orgid**: this is the organisation id we just saw about for Macquarie University (in this case **1030**)

Additionally, we need to set up the **callback userinfo URL**. This callback userinfo URL is used by LAMS to retrieve personal information about the user from the LMS. We add this callback URL as follows:

```
mysql> update ext_server_org_map
set userinfo_url =
'http://moodle.mq.edu.au/mod/lams/userinfo?un=%username%&ts=%timestamp%&hs=%hash%'
where orgid = '1030';
```

Note that the userinfo_url refers to the Moodle server (moodle.mq.edu.au). Change this according to your server. Usually, the **/mod/lams/userinfo?un=%username%&ts=%timestamp%&hs=%hash%** won't change (in the case of Moodle). For other systems it might be different.

On the LMS side (in this case Moodle, but the same config info applies to all)

1. Go to your configuration menu and click on the LAMS settings



2. Enter the LAMS server URL, server_id and server_key



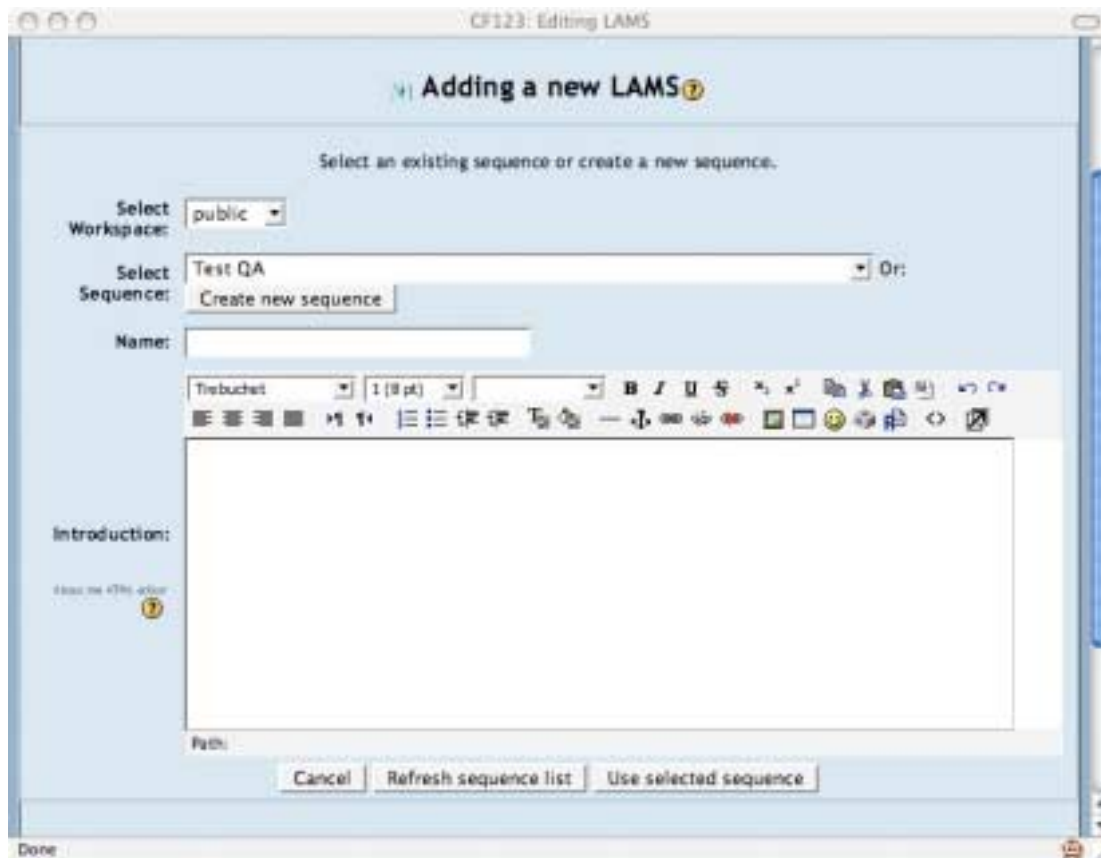
The screenshot shows a web browser window titled "LTS: LAMS: Configuration". The page header includes "LAMS Moodle Testing Server" and "You are logged in as Admin User (Logout)". The breadcrumb trail is "LTS - Administration - Configuration - Modules - LAMS". The main heading is "LAMS". A warning box states: "Be careful modifying these settings - strange values could cause problems." Below this are three input fields: "server_url" with the value "http://lamsmoodle.melcoe.mq.edu.au/lams/", "server_id" with the value "lamserver01", and "server_key" with the value "secretkey2005". To the right of each field is a descriptive text: "Enter the basic URL used to access the LAMS server. For example http://localhost:8080/lams", "Enter the server ID received from LAMS International.", and "Enter the server key received from LAMS International." respectively. A "Save changes" button is located below the fields. The status bar at the bottom left shows "Done".

Make sure you keep your sever_key private as that is the key used for authentication

That's it. You are done.

Now you can go to your course and add a LAMS sequence as show in this pictures:





See the integration animations for further details.

Problems and Comments?

Post them in the Tech Forum in the LAMS Community