

# Mahoodle://Integrating Mahara with Moodle

How many times each day do you find yourself logging on to some service or other? As web applications grow in popularity, users are obliged to juggle username and password details for more websites, email programs and desktop applications, and there's no evidence that the trend is slowing.

As administrators of interlinked web applications, we welcome any opportunity to make our systems easier for people to access and use, and Single-Sign-On (or SSO) is one great way to achieve that. Simply put, a user logs on to one application, and by clicking on specially crafted links that we provide there, is transparently authenticated to a second application, even though it may be running on another machine, in another room, on another continent.

When SSO works well, it can dramatically improve the sign-up experience for new users of your application:

- No need to 'create an account'
- No need to find an unused username
- No need to think up and remember yet another password
- No new URL to remember
- No need to log in to yet another application
- No need to upload the same profile mugshot to the new application

If you could smooth the path for new users of your application by removing all these obstacles, what impact do you think that might have on uptake?

With the release of Mahara 0.8.1 and Moodle 1.9, you can now configure your Moodle so that any user who logs in to Moodle can click on a link that will bring them to your Mahara site, and automatically log them on to their Mahara account. If they don't yet have an account on Mahara, their user data will be imported from Moodle, and used to populate their Mahara account. If they have a profile picture in Moodle, that will also be imported to their Mahara account.

The user can then begin using the Mahara account with absolutely zero configuration required.

Many Mahara users will want to keep using their Mahara account long after their formal relationship with your institution has ended, and your institution

might well have an interest in keeping alive links to its alumni.

With a few clicks of the mouse, you can configure multiple points of entry for your Mahara users.

If they want to sign on directly to Mahara, they can do so with a username and password. If they've already signed on to Moodle, they can click on a link to SSO into Mahara. When their Moodle account is no longer active, they can no longer SSO, but their Mahara account remains available via direct authentication.

Conversely, if you're the administrator of an existing Mahara system you might want to configure SSO to work in the opposite direction, creating an opportunity for your users to SSO from Mahara to a Moodle server. If you choose this configuration for your users, you can elect to have user records generated for them at the Moodle server on arrival.



This document outlines three scenarios for administrators of Moodle and Mahara systems, to assist in configuring their applications to interoperate.

## 1://Basic Networking

Chapter one focuses on tasks that are common to all three scenarios.

## 2://SSO into Mahara

Chapter two will introduce what's likely to be the most widely deployed option, of SSO from Moodle to Mahara.

## 3://Advanced SSO into Mahara

In chapter three, we'll look at some other options for Mahara authentication, considering the configuration of multiple authentication plugins, how they can be combined to create an authentication stack, and how we can combine them to offer a single user multiple routes into Mahara.

## 4://SSO into Moodle

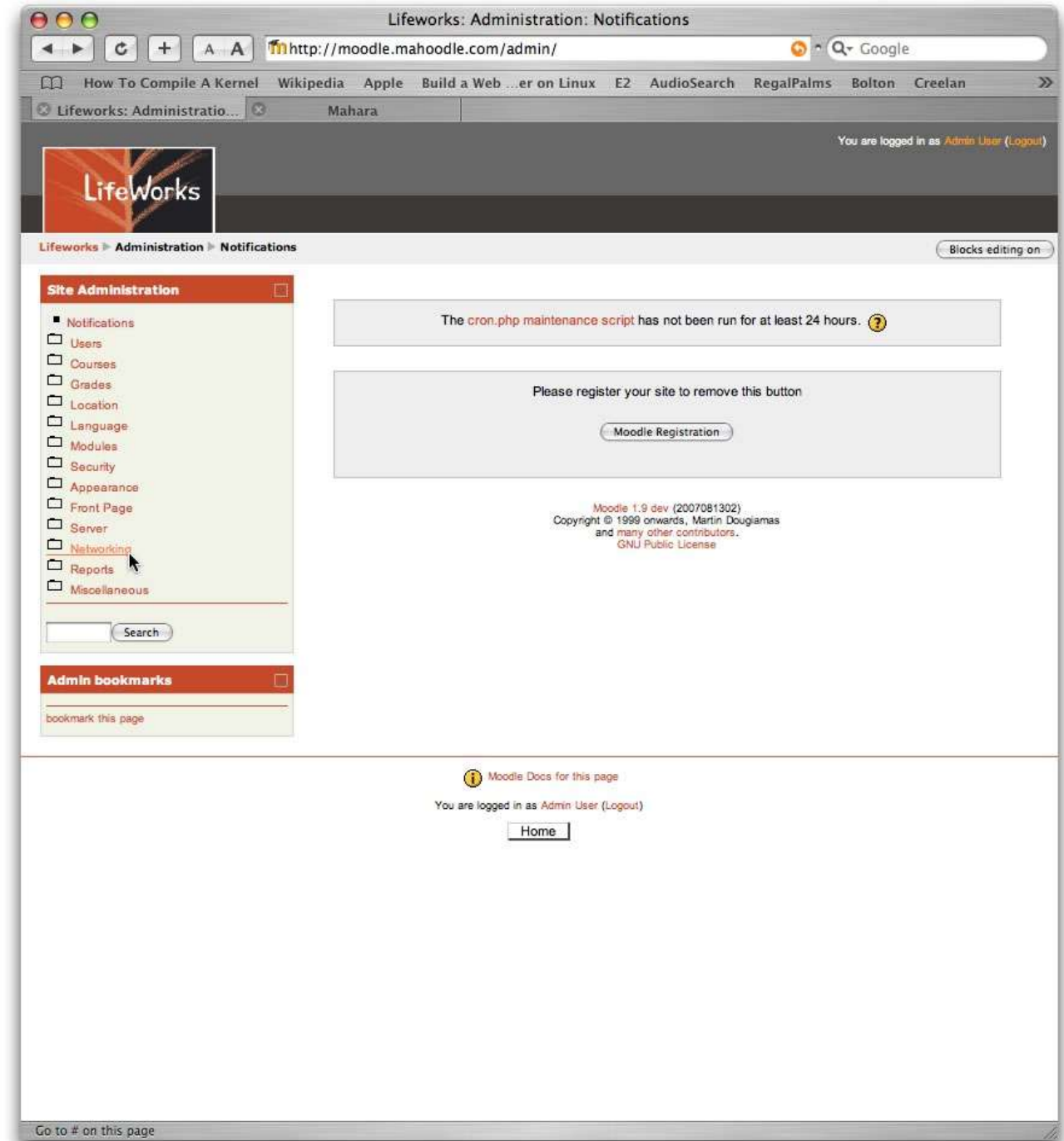
In the final chapter, we'll introduce SSO from Mahara to Moodle.

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## 1://Basic Networking

The normal install procedures for Moodle and Mahara are already well documented. We'll assume that you've already installed both Mahara and Moodle, and that the sites are ready for an administrator to start configuring users and courses. If either site is already in use, that's fine as well.

Make sure that you are logged onto Moodle as an administrator:



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## 1://Basic Networking: Moodle

From the Site Administration menu, click on Networking >> Settings, and change the Networking value to 'On'. Click 'Save Changes'.

Before we do any more configuration on Moodle, we need to enable networking on Mahara.

The screenshot shows the Moodle Mahoodle administration interface. The browser address bar displays `http://moodle.mahoodle.com/admin/mnet/index.php`. The page title is "Lifeworks: Administration: Networking: Settings". The user is logged in as "Admin User".

The main content area is titled "About your server" and contains the following information:

- Public key:** A long alphanumeric string starting with "-----BEGIN CERTIFICATE-----" and ending with "-----END CERTIFICATE-----".
- Valid until:** Wednesday, 12 September 2007, 07:43 PM
- Networking:** A radio button selection where "Off" is selected and "On" is unselected. A "Save changes" button is located below the selection.

Below the "About your server" section is a "Delete This Key" section with the following text:

Moodle automatically rotates your keys every 28 days (by default) but you have the option to *manually* expire this key at any time. This will only be useful if you believe this key has been compromised. A replacement will be immediately automatically generated. Deleting this key will make it impossible for other Moodles to communicate with you, until you manually contact each administrator and provide them with your new key.

At the bottom of the "Delete This Key" section is a "Delete" button.

The left sidebar contains a "Site Administration" menu with the following items:

- Notifications
- Users
- Courses
- Grades
- Location
- Language
- Modules
- Security
- Appearance
- Front Page
- Server
- Networking
  - Settings
  - Peers
  - SSO Access Control
  - Enrolments
  - XML-RPC hosts
- Reports
- Miscellaneous

There is also an "Admin bookmarks" section with a "bookmark this page" link.

At the bottom of the page, there is a "Moodle Docs for this page" link, a "You are logged in as Admin User (Logout)" message, and a "Home" button.

# Mahoodle://Integrating Mahara with Moodle

## 1://Basic Networking: Mahara

Make sure that your Mahara site is set up, and that you're logged on as an Administrator:

Click on Site Administration, and then on Networking:



The screenshot shows the Mahara administration interface in a web browser. The browser's address bar displays `http://mahara.mahoodle.com/admin/`. The page features a green and white color scheme. At the top right, there are buttons for "Logout" and "Return to Site". The Mahara logo is prominently displayed on the left, with a search box to its right. Below the logo, a navigation bar contains links for "ADMIN HOME", "CONFIGURE SITE", "MANAGE USERS", and "ADMINISTER EXTENSIONS". The "Administration" section is active, showing a list of options under "Configure Site":

- ▶ **Site options** - Configure basic site options such as the name, language and theme
- ▶ **Site pages** - Edit the core site content
- ▶ **Site menu** - Manage the links and files within the Main Menus
- ▶ **Admin Files** - Upload and administer files that can be put in the menus
- ▶ **Networking** - Configure networking for Mahara

Below this, the "Manage Users" section includes:

- ▶ **Suspended Users** - Suspend or reactivate users from using the site
- ▶ **Staff Users** - Assign users Staff permissions
- ▶ **Admin Users** - Assign Site Administrator access rights
- ▶ **Admin Notifications** - Overview of how administrators receive system notifications
- ▶ **Institutions** - Install and manage installed institutions
- ▶ **Add Users by CSV** - Upload a CSV file containing new users
- ▶ **User Search** - Search all users and perform administrative actions on them

The "Administer Extensions" section includes:

- ▶ **Plugin Administration** - Install and configure plugins
- ▶ **Configure View Templates** - View installed templates to check their validity

At the bottom of the page, there are links for "Terms and Conditions", "Privacy Statement", "About", and "Contact Us". The footer indicates "Mahara version 0.8.0 (2007080700)". The browser's status bar at the very bottom shows the URL `Go to "http://mahara.mahoodle.com/admin/site/networking.php"`.



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## A Word On Encryption

When we think of a key – for example the key for a padlock, we imagine that it can both lock and unlock that padlock. Although we call these lines of text your 'public key', this key is only used to 'lock' data – not to unlock it. This key is part of a pair, each of which is useless without the other. One locks the data, and the other – your private key – unlocks it.

So – it's perfectly safe to publish this key without worrying about the security of your data. In fact – we supply this key to other servers, and they use it to encrypt data that they want to send to us. They know that the data it encrypts can only be decrypted by us, as we hold the corresponding private key.



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1://Basic Networking: Mahara

Mahara acknowledges the choices that you have made.



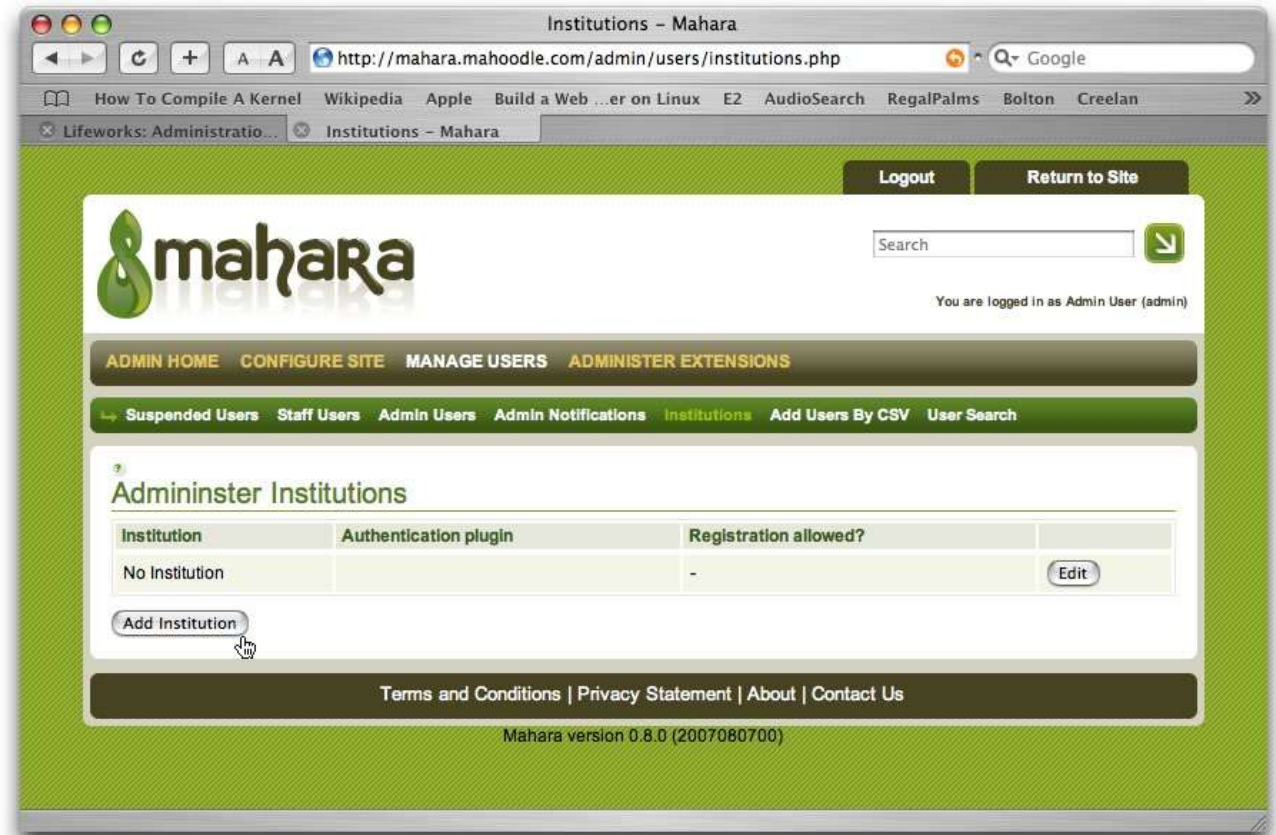


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## 2://Enable SSO: Mahara

Click on 'Admin home' to go back to the main administration menu, and on that page, in the 'Manage Users' section, click on the link to 'Institutions'.

If you are certain that your Mahara site will only ever serve one Moodle, click on Edit to update the details for the default institution. Otherwise, click on 'Add institution', to create a new record for the institution that is hosting your Moodle. We'll detail the 'Add institution' option, although editing the default institution is almost identical.

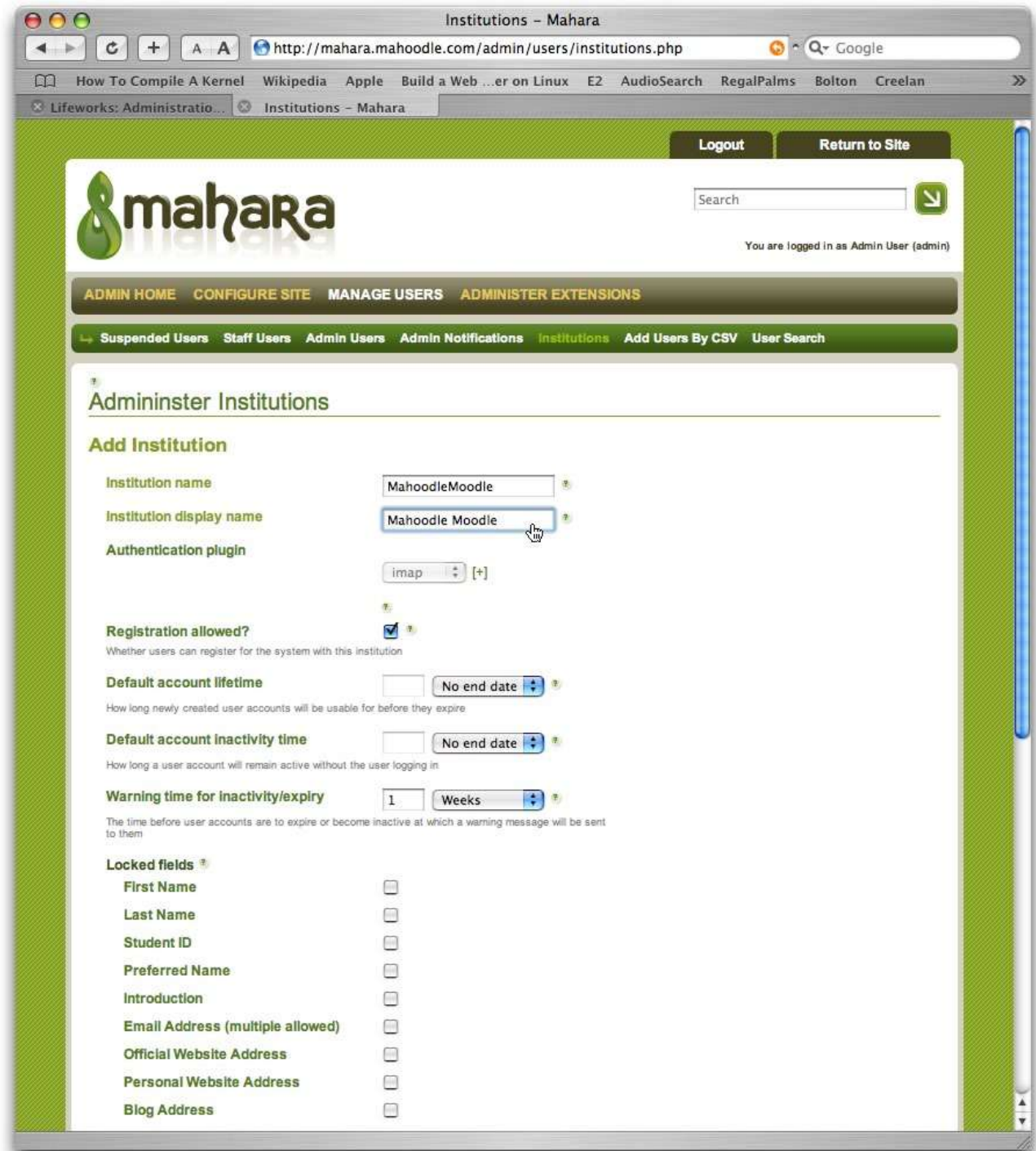


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## 2://Enable SSO: Mahara

The institution name can be any word made up of only letters. Spaces and numbers are not permitted in the institution name. The Institution display name can include spaces and numbers. I've opted to give my institution the name MahoodleMoodle and the display name; Mahoodle Moodle.

The authentication plugin can't be configured until the institution record has been created, so just ignore that for the moment. The default values in the other fields will be adequate to get started. Click on 'Submit' at the bottom of the page to save your settings. The page will reappear, and the authentication plugin menu will be enabled.



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## 2://Enable SSO: Mahara

Note that the Institution name field is gone. It will be hidden from both users and administrators from this point on.

Choose xmlrpc from the Authentication plugin pulldown menu, and click on the plus-sign beside that menu to add a new authentication method.

A new window will open, displaying the configuration options for XMLRPC.

This plugin can have a parent, but we will configure it without one; that means it will be the only means for users of the Moodle system to log on to their linked Mahara account.

The screenshot shows a web browser window titled "Institutions - Mahara" with the URL `http://mahara.mahoodle.com/admin/users/institutions.php?i=mahoodle`. The page features a green header with the Mahara logo and navigation buttons for "Logout" and "Return to Site". A search bar is present in the top right. Below the header, a navigation menu includes "ADMIN HOME", "CONFIGURE SITE", "MANAGE USERS", and "ADMINISTER EXTENSIONS". A secondary menu shows "Suspended Users", "Staff Users", "Admin Users", "Admin Notifications", "Institutions", "Add Users By CSV", and "User Search". A green message bar states: "Institution added successfully. Please configure an authentication plugin for this institution." The main content area is titled "Administer Institutions" and contains the following configuration options:

- Institution display name:** A text input field containing "Mahoodle Moodle".
- Authentication plugin:** A dropdown menu currently set to "internal", with a plus sign icon to its right.
- Registration allowed?:** A checked checkbox with the label "Whether users can register for the system with this institution".
- Default account lifetime:** A text input field with "No end date" and a dropdown menu.
- Default account inactivity time:** A text input field with "No end date" and a dropdown menu.
- Warning time for inactivity/expiry:** A text input field with "1" and a dropdown menu set to "Weeks".

At the bottom, a section titled "Locked fields" lists various user profile fields with checkboxes to their right:

- First Name
- Last Name
- Student ID
- Preferred Name
- Introduction
- Email Address (multiple allowed)
- Official Website Address
- Personal Website Address
- Blog Address
- Postal Address
- Town

The browser's address bar at the bottom shows the URL: `Go to "http://mahara.mahoodle.com/admin/users/institutions.php?i=mahoodlemoodle"`.

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## Configuring the XMLRPC plugin

A new window will open with configuration options for the xmlrpc plugin.

The authority name will identify this authority to you, the administrator. I've called this 'Mahoodle XMLRPC', although I could just have called it XMLRPC because I already know that this authority will only authenticate users from the Mahoodle institution.

The parent authority is 'None'. If we had already configured an authority for this institution, and that authority was itself canonical (i.e. does not require a parent), then it would appear as an option in this dropdown list.

The next field – WWW Root – is absolutely crucial to get right, and most problems with Mahara & Moodle integration that we've experienced in testing are caused by errors in entering this value. In fact it's very simple: the WWW Root must be exactly what is specified in Moodle's config.php.

Please take care not to enter a 'www' before the WWW root hostname, if there is no www in your wwwroot field. While it might be possible to access the Moodle site at this URL, this will cause problems for you, and will likely prevent networking between the sites from working.

In short – find out what is entered in the config.php file of your Moodle and enter exactly that.

Choose the application that is being hosted at the remote site from the pulldown menu – in our case, we want to choose Moodle – and then enable some networked services by clicking on the checkboxes underneath.

By enabling 'They SSO in', you're permitting users who log on at Moodle to enter your Mahara site without having to log on again.

By enabling 'Update user info on login', you're asking your Mahara server to check that the user hasn't changed his details on Moodle each time he logs in, and if he has, update his Mahara user record with those same details.

By enabling 'We auto-create users', you can automate the process of creating user records, so that a Mahara

The screenshot shows a web browser window titled "Add an Authority". The page has the Mahara logo and the heading "Administer Authorities". The form contains the following fields and options:

- Authority name: Mahoodle XMLRPC
- Parent authority: None
- WWW root: http://moodle.mahoodle.c
- Site name: Mahoodle Moodle
- Application: Moodle
- Port number: 80
- We SSO out:
- They SSO in:
- Update user info on login:
- We auto-create users:
- They auto-create users:

At the bottom right, there are "Submit" and "Cancel" buttons. A mouse cursor is pointing at the "Submit" button.

user record is automatically created for every Moodle user who clicks on the SSO link to be signed on to Mahara.

In this example, we're going for the most-automated option, so we don't have to do any user-setup on our Mahara site at all.

Click on 'Submit'. The window will close and the new xmlrpc authentication plugin instance will be listed on your 'Administer Institutions' page:

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## Configuring the XMLRPC plugin

If Mahara has been unable to communicate properly with Moodle at the WWW Root that you've entered, you're likely to see an error message like this one.

Please double check that you've chosen 'Moodle' as your application, and that the WWW Root you've entered matches the value in Moodle's config.php file.

If you've managed to configure this correctly, the window will disappear when you click 'Submit' and the authority name you've entered here will appear as a new authority on your institution's config page.

Click 'Submit' at the bottom of the institution's configuration page to complete SSO setup on Mahara.

**Add an Authority**

**Administer Authorities**

Authority name: Mahoodle XMLRPC

Parent authority: None

WWW root: //moodle.mahoodle.com

An error occurred while retrieving the public key from the remote server.  
Please ensure that the Application and WWW Root fields are correct, and that networking is enabled on the remote host.

Site name: Mahoodle Moodle

Application: Moodle

Port number: 80

We SSO out:

They SSO in:

Update user info on login:

We auto-create users:

They auto-create users:

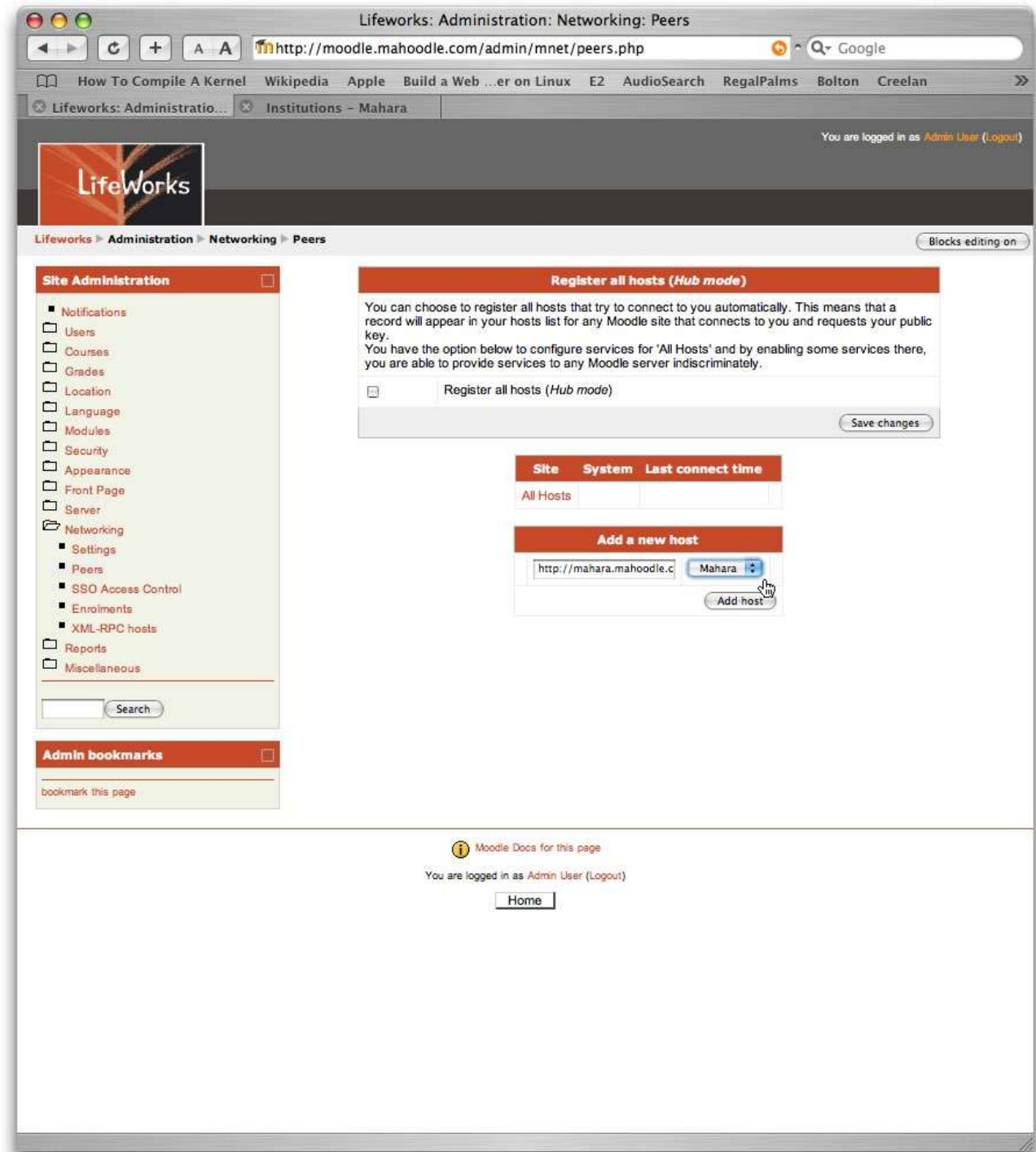
Submit Cancel

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## 2://Enable SSO: Moodle

Next we go back to our Moodle app, and again – ensure that we're logged on as an administrator.

From the Site Administration menu, choose Networking >> Peers:



The screenshot shows a web browser window with the URL `http://moodle.mahoodle.com/admin/mnet/peers.php`. The page title is "Lifeworks: Administration: Networking: Peers". The user is logged in as "Admin User".

The main content area is titled "Register all hosts (Hub mode)". It contains the following text:

You can choose to register all hosts that try to connect to you automatically. This means that a record will appear in your hosts list for any Moodle site that connects to you and requests your public key. You have the option below to configure services for 'All Hosts' and by enabling some services there, you are able to provide services to any Moodle server indiscriminately.

There is a checkbox labeled "Register all hosts (Hub mode)" which is currently unchecked. A "Save changes" button is located below the checkbox.

Below this is a table with the following columns: "Site", "System", and "Last connect time". The table contains one row with the value "All Hosts" in the "Site" column.

Below the table is a section titled "Add a new host". It contains a text input field with the value "http://mahara.mahoodle.c", a dropdown menu with "Mahara" selected, and an "Add host" button.

On the left side of the page, there is a "Site Administration" menu with the following items:

- Notifications
- Users
- Courses
- Grades
- Location
- Language
- Modules
- Security
- Appearance
- Front Page
- Server
- Networking
  - Settings
  - Peers
  - SSO Access Control
  - Enrolments
  - XML-RPC hosts
- Reports
- Miscellaneous

At the bottom of the page, there is a "Moodle Docs for this page" link, a "You are logged in as Admin User (Logout)" message, and a "Home" button.

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## 2://Enable SSO: Moodle

Ignore the 'Register all hosts' option for now. This will probably not be relevant to very many Moodle operators.

Under 'Add a new host', enter the WWW Root value from your Mahara site into the field. You can find this in the network administration page of your Mahara site.

Choose 'Mahara' from the dropdown menu, and click on 'Add host'. Moodle will fetch the public encryption key from the Mahara server and display it on the next screen.

The screenshot shows a web browser window with the URL `http://moodle.mahoodle.com/admin/mnet/peers.php`. The page title is "Lifeworks: Administration: Networking: Peers". The user is logged in as "Admin User".

The interface is divided into several sections:

- Site Administration:** A sidebar menu with categories like Notifications, Users, Courses, Grades, Location, Language, Modules, Security, Appearance, Front Page, Server, Networking (selected), Settings, Peers, SSO Access Control, Enrolments, XML-RPC hosts, Reports, and Miscellaneous. A search box is at the bottom.
- Admin bookmarks:** A section with a "bookmark this page" link.
- Register all hosts (Hub mode):** A section with a checkbox and a "Save changes" button. The checkbox is currently unchecked.
- Table:** A table with columns "Site", "System", and "Last connect time". It contains one row: "All Hosts".
- Add a new host:** A form with a text input field containing "http://mahara.mahoodle.c", a dropdown menu set to "Mahara", and an "Add host" button.

At the bottom of the page, there is a "Moodle Docs for this page" link, a "You are logged in as Admin User (Logout)" message, and a "Home" button.

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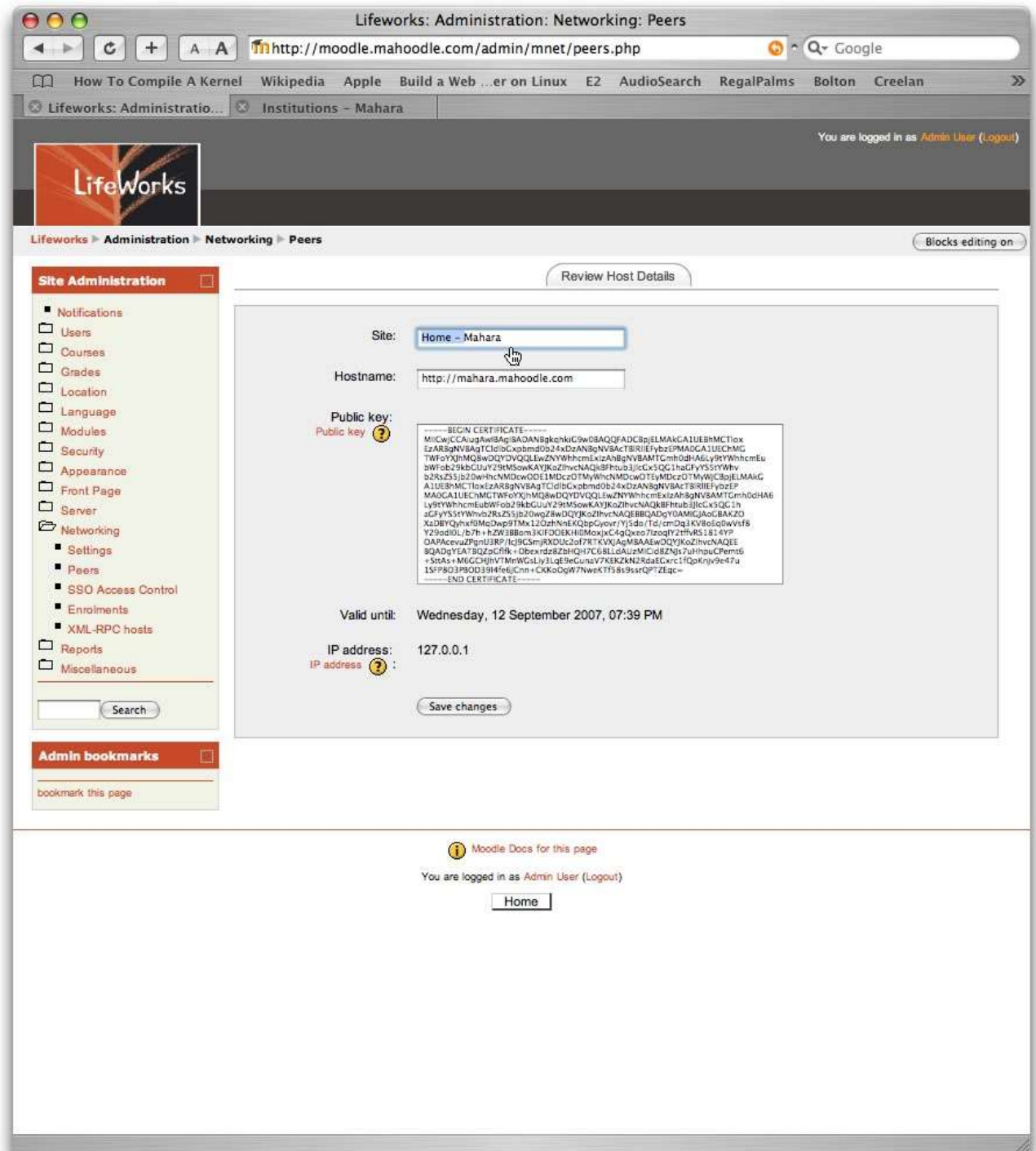
## 2://Enable SSO: Moodle

The 'Site' value on this page is editable. You can change this to something descriptive that will identify your Mahara site to you and your students. In the screenshot, I'm about to delete 'Home - ' from the Site name.

If there are no error messages on the screen, and the 'Public key' field is filled with '-----BEGIN CERTIFICATE-----' followed by some seemingly random text, then your Moodle has successfully retrieved Mahara's public encryption key.

If Moodle reports an error in retrieving Mahara's key, check that the value entered in the Hostname field of this page is the same as the WWW Root value displayed on Mahara's Networking page.

If everything looks ok, click on 'Save changes'. The same page will reappear, with a new tab listed at the top. Click on this 'Services' tab to setup SSO with Mahara.





# Mahoodle://Integrating Mahara with Moodle

## 2://Enable SSO: Moodle

The first service listed; 'Moodle networked enrolment' is only relevant to Moodles networking with other Moodles, so we can ignore that for now.

In the section titled 'SSO (Identity Provider)', you want to tick the 'Publish' checkbox. Moodle is going to publish a service to Mahara which identifies users to Mahara. You can leave the 'Subscribe' box unchecked.

In the section titled 'SSO (Service Provider)', click on 'Subscribe' to tick that checkbox. Moodle users will subscribe to services that are provided by the Mahara site.

That's all for now – click on 'Save changes'.

The screenshot shows a web browser window with the URL `http://moodle.mahoodle.com/admin/mnet/mnet_services.php?step=list`. The page title is "Lifeworks: Administration: Networking: Peers". The user is logged in as "Admin User". The interface includes a navigation menu on the left with "Site Administration" and "Admin bookmarks" sections. The "Site Administration" menu is expanded to show "Networking" > "Peers". The main content area displays three service configuration sections:

- Moodle Networked Enrolment**:
  - Publish this service to allow administrators at Mahara to enrol their students in courses you have created on your server.
    - *Dependency:* You must also **publish** the SSO (Service Provider) service to Mahara.
    - *Dependency:* You must also **subscribe** to the SSO (Identity Provider) service on Mahara.
  - Subscribe to this service to be able to enrol your students in courses on Mahara.
    - *Dependency:* You must also **subscribe** to the SSO (Service Provider) service on Mahara.
    - *Dependency:* You must also **publish** the SSO (Identity Provider) service to Mahara.
  - Publish
  - Subscribe
- SSO (Identity Provider)**:
  - Publish this service to allow your users to roam to the Mahara Moodle site without having to re-login there.
    - *Dependency:* You must also **subscribe** to the SSO (Service Provider) service on Mahara.
  - Subscribe to this service to allow authenticated users from Mahara to access your site without having to re-login.
    - *Dependency:* You must also **publish** the SSO (Service Provider) service to Mahara.
  - Publish
  - Subscribe
- SSO (Service Provider)**:
  - Publish this service to allow authenticated users from Mahara to access your site without having to re-login.
    - *Dependency:* You must also **subscribe** to the SSO (Identity Provider) service on Mahara.
  - Subscribe to this service to allow your users to roam to the Mahara Moodle site without having to re-login there.
    - *Dependency:* You must also **publish** the SSO (Identity Provider) service to Mahara.
  - Publish
  - Subscribe

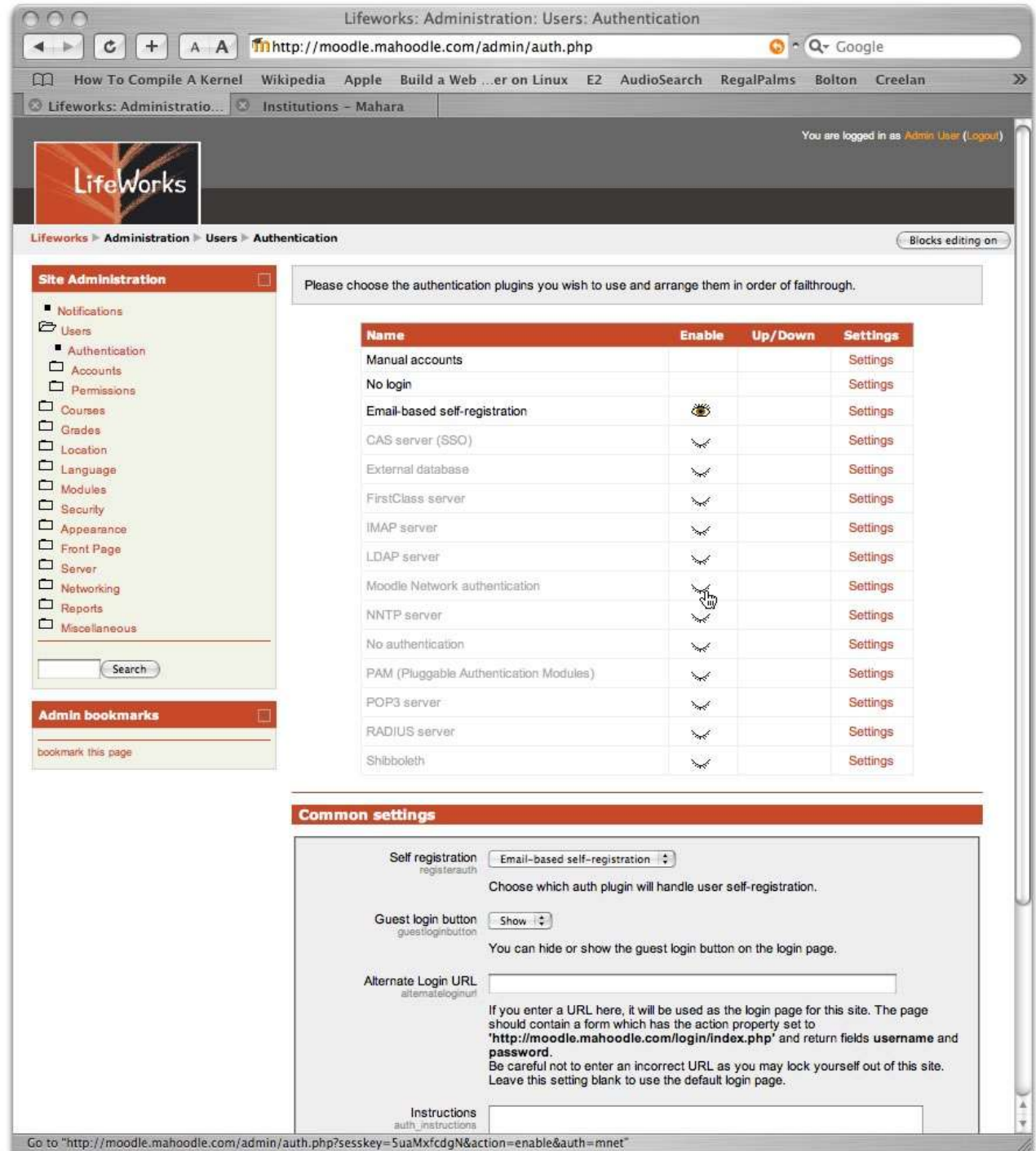
At the bottom of the page, there is a "Save changes" button with a mouse cursor hovering over it.

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## 2://Enable SSO: Moodle

In the Site Administration panel, click on Users and choose Authentication from the menu.

Enable the Moodle Network Authentication plugin, and click on 'Settings'.



The screenshot shows the Moodle administration interface for authentication settings. The browser address bar shows the URL `http://moodle.mahoodle.com/admin/auth.php`. The page title is "Lifeworks: Administration: Users: Authentication". The breadcrumb trail is "Lifeworks > Administration > Users > Authentication".

The left sidebar contains the "Site Administration" menu with the following items: Notifications, Users, Authentication (selected), Accounts, Permissions, Courses, Grades, Location, Language, Modules, Security, Appearance, Front Page, Server, Networking, Reports, and Miscellaneous. Below the menu is a search box. The "Admin bookmarks" section contains a "bookmark this page" link.

The main content area displays a message: "Please choose the authentication plugins you wish to use and arrange them in order of failthrough." Below this is a table of authentication plugins:

Name	Enable	Up/Down	Settings
Manual accounts	<input type="checkbox"/>		<a href="#">Settings</a>
No login	<input type="checkbox"/>		<a href="#">Settings</a>
Email-based self-registration	<input checked="" type="checkbox"/>		<a href="#">Settings</a>
CAS server (SSO)	<input type="checkbox"/>		<a href="#">Settings</a>
External database	<input type="checkbox"/>		<a href="#">Settings</a>
FirstClass server	<input type="checkbox"/>		<a href="#">Settings</a>
IMAP server	<input type="checkbox"/>		<a href="#">Settings</a>
LDAP server	<input type="checkbox"/>		<a href="#">Settings</a>
Moodle Network authentication	<input checked="" type="checkbox"/>		<a href="#">Settings</a>
NNTP server	<input type="checkbox"/>		<a href="#">Settings</a>
No authentication	<input type="checkbox"/>		<a href="#">Settings</a>
PAM (Pluggable Authentication Modules)	<input type="checkbox"/>		<a href="#">Settings</a>
POP3 server	<input type="checkbox"/>		<a href="#">Settings</a>
RADIUS server	<input type="checkbox"/>		<a href="#">Settings</a>
Shibboleth	<input type="checkbox"/>		<a href="#">Settings</a>

Below the table is the "Common settings" section:

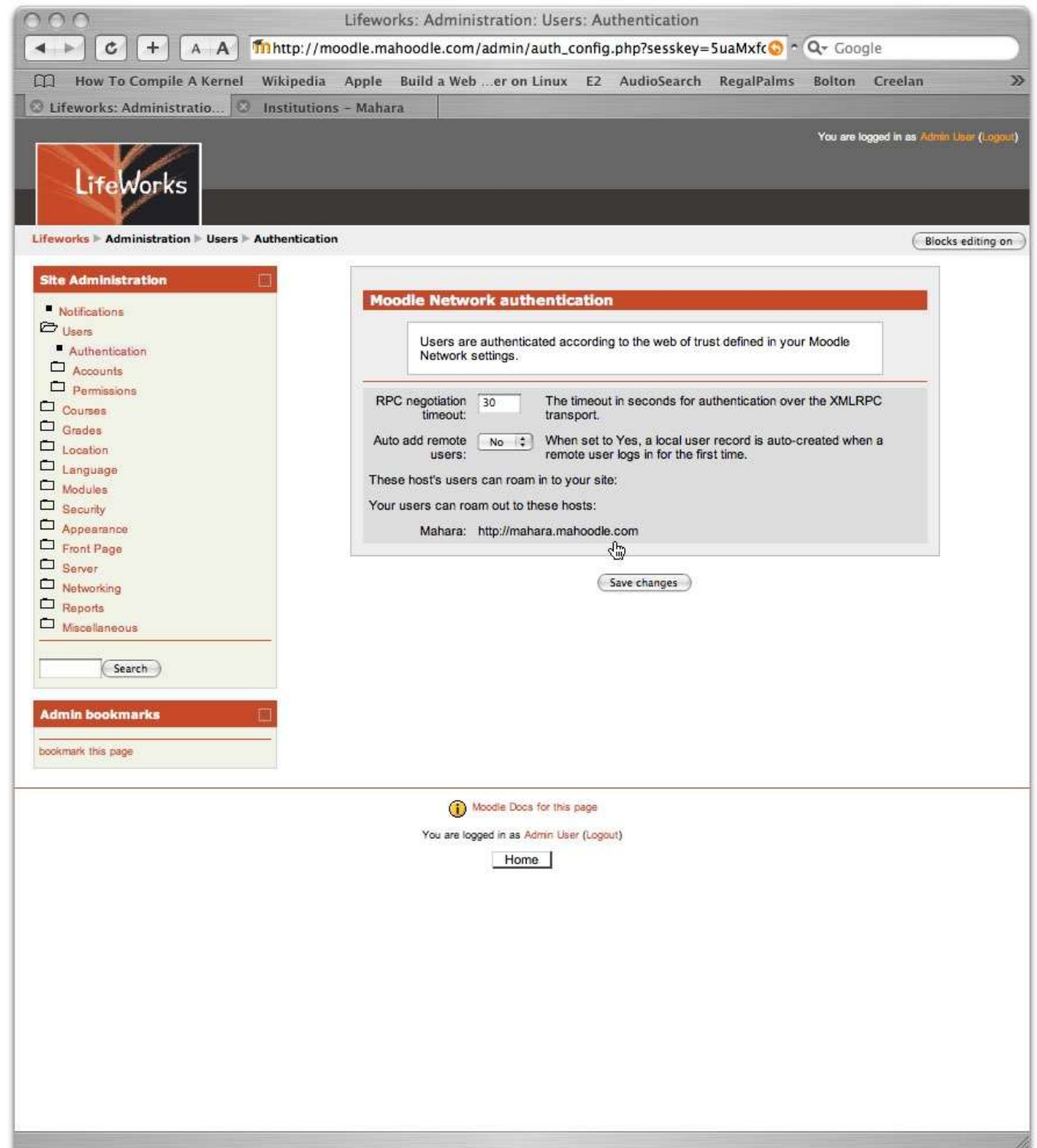
- Self registration** (`registerauth`): Email-based self-registration. Choose which auth plugin will handle user self-registration.
- Guest login button** (`guestloginbutton`): Show. You can hide or show the guest login button on the login page.
- Alternate Login URL** (`alternateloginurl`): [Empty text box]. If you enter a URL here, it will be used as the login page for this site. The page should contain a form which has the action property set to `'http://moodle.mahoodle.com/login/index.php'` and return fields **username** and **password**. Be careful not to enter an incorrect URL as you may lock yourself out of this site. Leave this setting blank to use the default login page.
- Instructions** (`auth_instructions`): [Empty text box].

The footer of the page contains the URL: `Go to "http://moodle.mahoodle.com/admin/auth.php?sesskey=5uaMxfcdgN&action=enable&auth=mnet"`

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We don't actually want to change any of the values in this page, but we can see that it lists the sites that our users have the option of roaming to. Our Mahara site is listed here.



The screenshot shows a web browser window displaying the Moodle administration interface. The browser's address bar shows the URL `http://moodle.mahoodle.com/admin/auth_config.php?sesskey=5uaMxfc`. The page title is "Lifeworks: Administration: Users: Authentication".

The interface includes a navigation menu on the left with categories like "Site Administration" and "Admin bookmarks". The main content area is titled "Moodle Network authentication" and contains the following information:

- A message box: "Users are authenticated according to the web of trust defined in your Moodle Network settings."
- Configuration options:
  - RPC negotiation timeout: 30 (The timeout in seconds for authentication over the XMLRPC transport.)
  - Auto add remote users: No (When set to Yes, a local user record is auto-created when a remote user logs in for the first time.)
- Hosts configuration:
  - These host's users can roam in to your site:
  - Your users can roam out to these hosts:
    - Mahara: `http://mahara.mahoodle.com`
- A "Save changes" button.

At the bottom of the page, there is a Moodle Docs link and a "Home" button. The user is logged in as "Admin User (Logout)".

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## 2://Enable SSO: Moodle

The final step in enabling SSO with Mahara, is to give your users the permission to roam to other sites in the Moodle Roles system. Choose Users >> Permissions >> Define Roles from the Site Administration menu.

Click on the 'Edit' button for the 'Authenticated User' role. In practice of course you're free to provide access to the Mahara server to a restricted group of users; perhaps just the students on a particular course.

The screenshot shows the Moodle administration interface for 'Lifeworks'. The browser address bar shows 'http://moodle.mahoodle.com/admin/roles/manage.php'. The page title is 'Lifeworks: Administration: Users: Permissions: Define roles'. The user is logged in as 'Admin User'. The left sidebar shows the 'Site Administration' menu with 'Permissions' > 'Define roles' selected. The main content area shows a table of roles with columns for Name, Description, Short name, and Edit. The 'Authenticated user' role is highlighted, and the 'Edit' button is visible below it.

Name	Description	Short name	Edit
Administrator	Administrators can usually do anything on the site, in all courses.	admin	
Course creator	Course creators can create new courses and teach in them.	coursecreator	
Teacher	Teachers can do anything within a course, including changing the activities and grading students.	editingteacher	
Non-editing teacher	Non-editing teachers can teach in courses and grade students, but may not alter activities.	teacher	
Student	Students generally have less privileges within a course.	student	
Guest	Guests have minimal privileges and usually can not enter text anywhere.	guest	
Authenticated user	All logged in users.	user	

Buttons: Add a new role, Edit

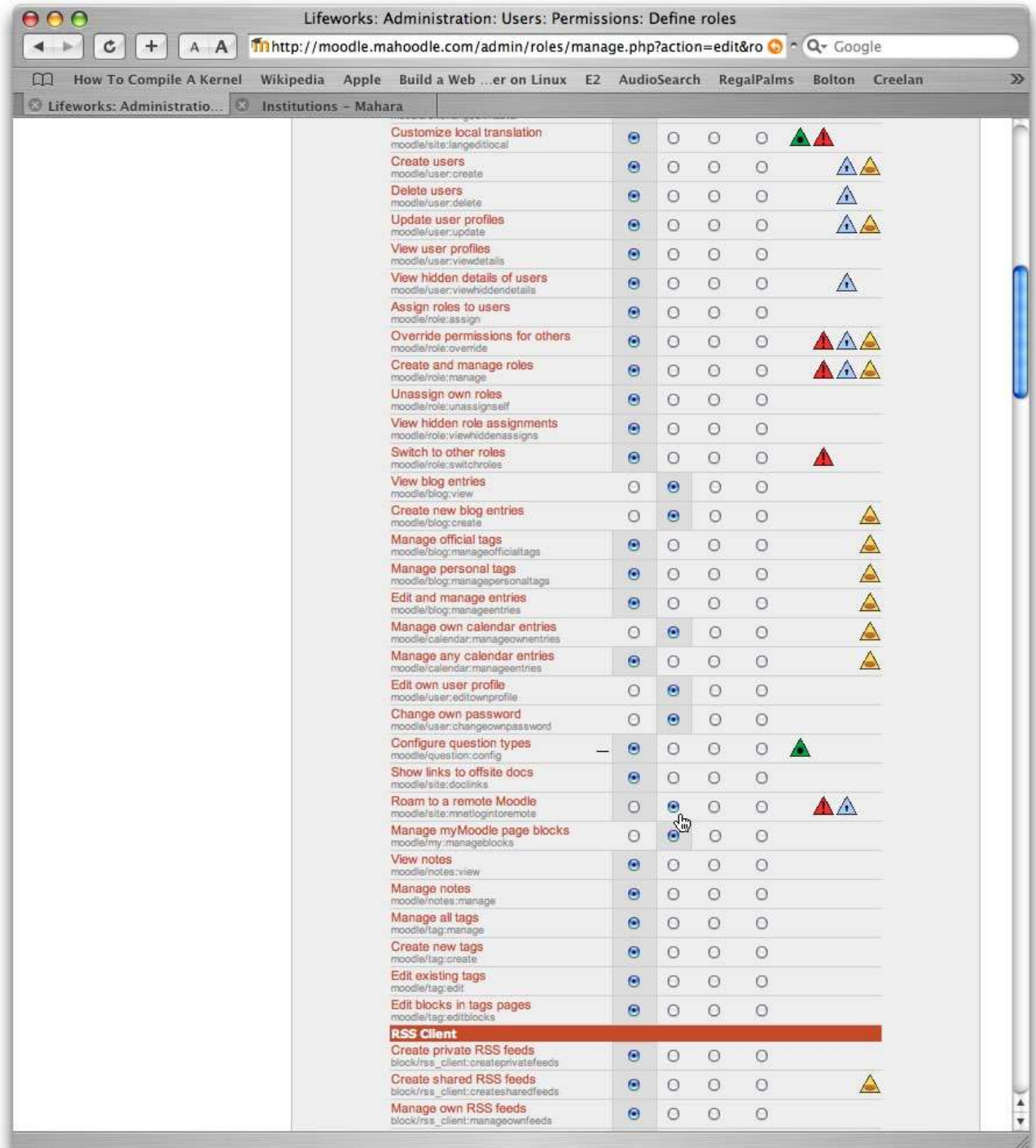
Footer: Moodle Docs for this page, You are logged in as Admin User (Logout), Home

Go to "http://moodle.mahoodle.com/admin/roles/manage.php?action=edit&roleid=7"

# Mahoodle://Integrating Mahara with Moodle

## 2://Enable SSO: Moodle

Scroll to the option 'Roam to a remote Moodle' and click the second radio button to enable this. Click on 'Save changes' at the bottom of the screen.



# Mahoodle://Integrating Mahara with Moodle

## 2://Enable SSO: Moodle

Now that everything is set up to allow our users to roam to Mahara, we just have to provide them with a link to bring them to the site.

Navigate back to your Moodle homepage and click on 'Turn editing on'.

The screenshot shows a web browser window displaying the Moodle website. The browser's address bar shows the URL `http://moodle.mahoodle.com/`. The page header includes the Moodle logo and navigation links such as "How To Compile A Kernel", "Wikipedia", "Apple", "Build a Web ...er on Linux", "E2", "AudioSearch", "RegalPalms", "Bolton", and "Creelan". The user is logged in as "Admin User" with a "Logout" link and a language selector set to "English (en)".

The main content area is divided into several sections:

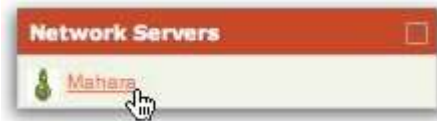
- Main Menu:** A vertical sidebar on the left containing six menu items: "IS LIFEWORCS FOR ME", "APPLY NOW", "STUDENT PROFILES", "e-CAMPUS", "ABOUT US", and "FAQ".
- Forum:** A central text box with the heading "The LifeWorks Forum is here for you to post questions for the Customer Support team. Check out the discussion topics below to see the type of questions people have already asked." Below this, it states: "If you would like to post a question of your own, you must register and log in to the site."
- Available Courses:** A section with a red header containing a link: "How to configure Moodle". Below the link, it says: "An introduction to installing and configuring a Moodle installation to support your learning activities."
- Calendar:** A calendar widget for August 2007, showing dates from 1 to 31.

At the bottom of the page, there is a "Site Administration" link and a footer area that says "You are logged in as Admin User (Logout)" and features the Moodle logo.

# Mahoodle://Integrating Mahara with Moodle

## 2://Enable SSO: Moodle

Once you choose the 'Network servers' block from the Blocks menu, your Mahara server should be listed in it, alongside its mini-icon.



LifeWorks e-campus

http://moodle.mahoodle.com/

You are logged in as Admin User (Logout)

English (en)

### Network Servers

Mahara

### Main Menu

- IS LIFEWORKS FOR ME
- APPLY NOW
- STUDENT PROFILES
- e-CAMPUS
- ABOUT US
- FAQ

### Site Administration

### Course/Site Description

Welcome to the LifeWorks e-Campus.

### Calendar

August 2007

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

### Blocks

- Add...
- Activities
- Admin bookmarks
- Blog Menu
- Blog Tags
- Courses
- Global Search
- HTML
- Latest News
- Loan calculator
- Login
- Main Menu
- Mentees
- Messages
- Network Servers**
- Online Users
- People
- Random Glossary Entry
- Recent Activity
- Remote RSS Feeds
- Search Forums
- Upcoming Events

You are logged in as Admin User (Logout)

# Mahoodle://Integrating Mahara with Moodle

## 2://Enable SSO: Moodle

We'll need some users to allow us to test our new SSO configuration. I've created records for a couple of names you might recognise.

Now that we're done configuring SSO, we can log off from both Moodle and Mahara, and log back into Moodle (only) as Rosa Parks.

The screenshot shows the Moodle administration interface for user management. The browser address bar indicates the URL is `http://moodle.mahoodle.com/admin/user.php`. The page title is "Lifeworks: Administration: Users: Accounts: Browse list of users".

The main content area is titled "3 Users" and includes a search bar with the following filters:

- First name : All ABCDEFGHIJKLMNOPQRSTUVWXYZ
- Surname : All ABCDEFGHIJKLMNOPQRSTUVWXYZ

Below the search bar is a section titled "Add a new user" which contains a table of existing users:

First name / Surname	Email address	City/town	Country	Last access		
Abraham Lincoln	a.lincoln@example.com	Springfield	United States of America	Never	Edit	Delete
Admin User	donal@catalyst.net.nz	Wellington	New Zealand	now	Edit	
Rosa Parks	r.parks@example.com	Detroit	United States of America	Never	Edit	Delete

Below the table is another "Add a new user" section. At the bottom of the page, there is a "Moodle Docs for this page" link and a "Home" button. The user is logged in as "Admin User (Logout)".



# Mahoodle://Integrating Mahara with Moodle

2://Enable SSO: Moodle

Our Mahara server is listed in the 'Network Servers' block. Click on 'Mahara' to initiate SSO.

The screenshot shows a web browser window titled "LifeWorks e-campus" with the URL "http://moodle.mahoodle.com/". The browser's address bar and search bar are visible. The page content includes a "LifeWorks" logo, a "Main Menu" sidebar with links like "IS LIFEWORKS FOR ME", "APPLY NOW", "STUDENT PROFILES", "e-CAMPUS", "ABOUT US", and "FAQ". The main content area features a forum announcement, a "My courses" section with a link to "How to configure Moodle", and a "Calendar" for August 2007. A "Network Servers" block at the bottom right lists "Mahara". The user is logged in as "Rosa Parks" and the language is set to "English (en)".

You are logged in as [Rosa Parks \(Logout\)](#) English (en)

### Main Menu

- IS LIFEWORKS FOR ME
- APPLY NOW
- STUDENT PROFILES
- e-CAMPUS
- ABOUT US
- FAQ

The LifeWorks Forum is here for you to post questions for the Customer Support team. Check out the discussion topics below to see the type of questions people have already asked.

If you would like to post a question of your own, you must register and [log in](#) to the site.

### My courses

[How to configure Moodle](#)

An introduction to installing and configuring a Moodle installation to support your learning activities.

### Calendar

August 2007

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

### Network Servers

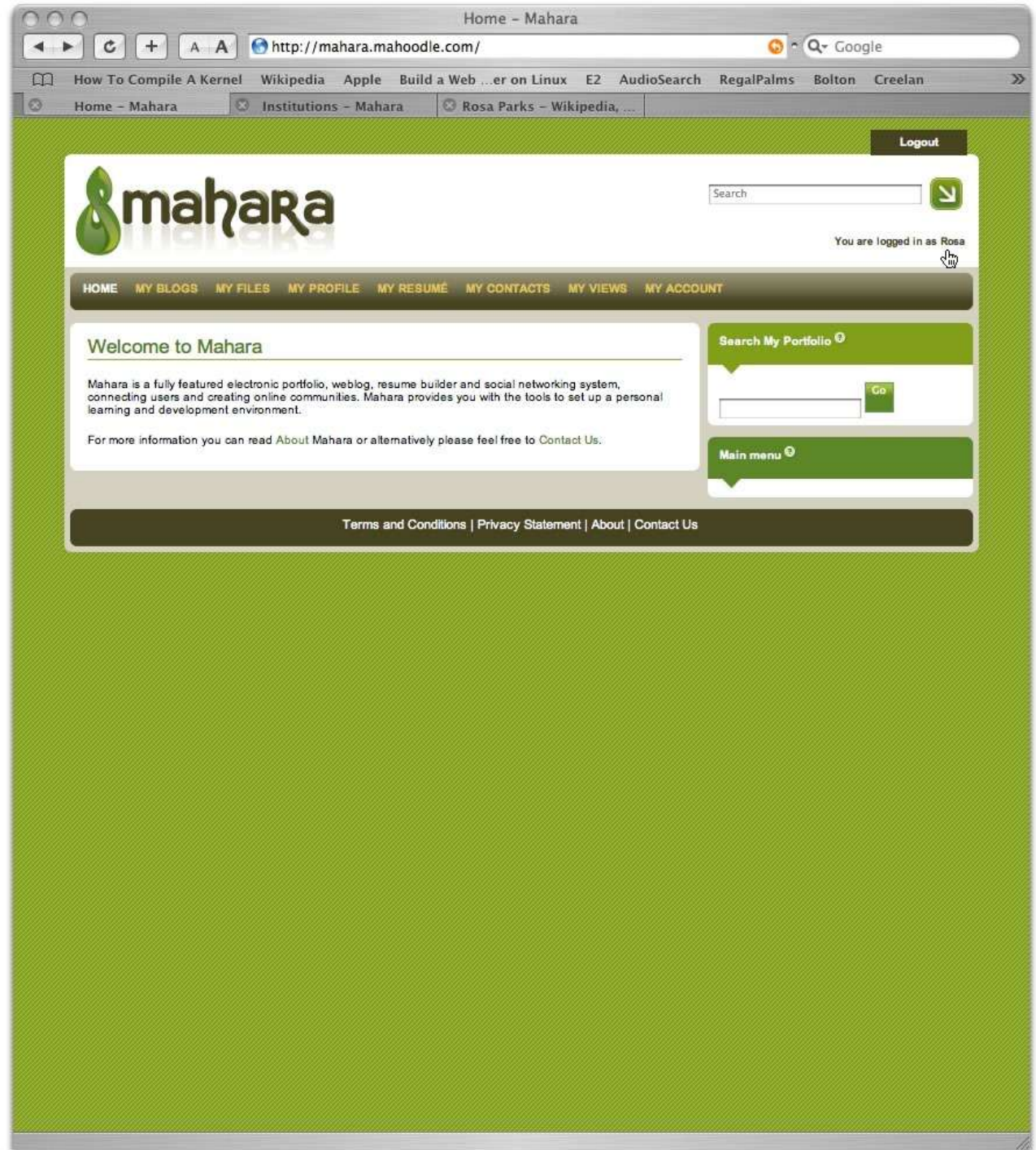
- Mahara

You are logged in as [Rosa Parks \(Logout\)](#)

# Mahoodle://Integrating Mahara with Moodle

## 2://Enable SSO: Moodle

We arrive at the Mahara welcome page, and we're told that "You are logged in as Rosa". The 'logout' option appears at the top of the screen.



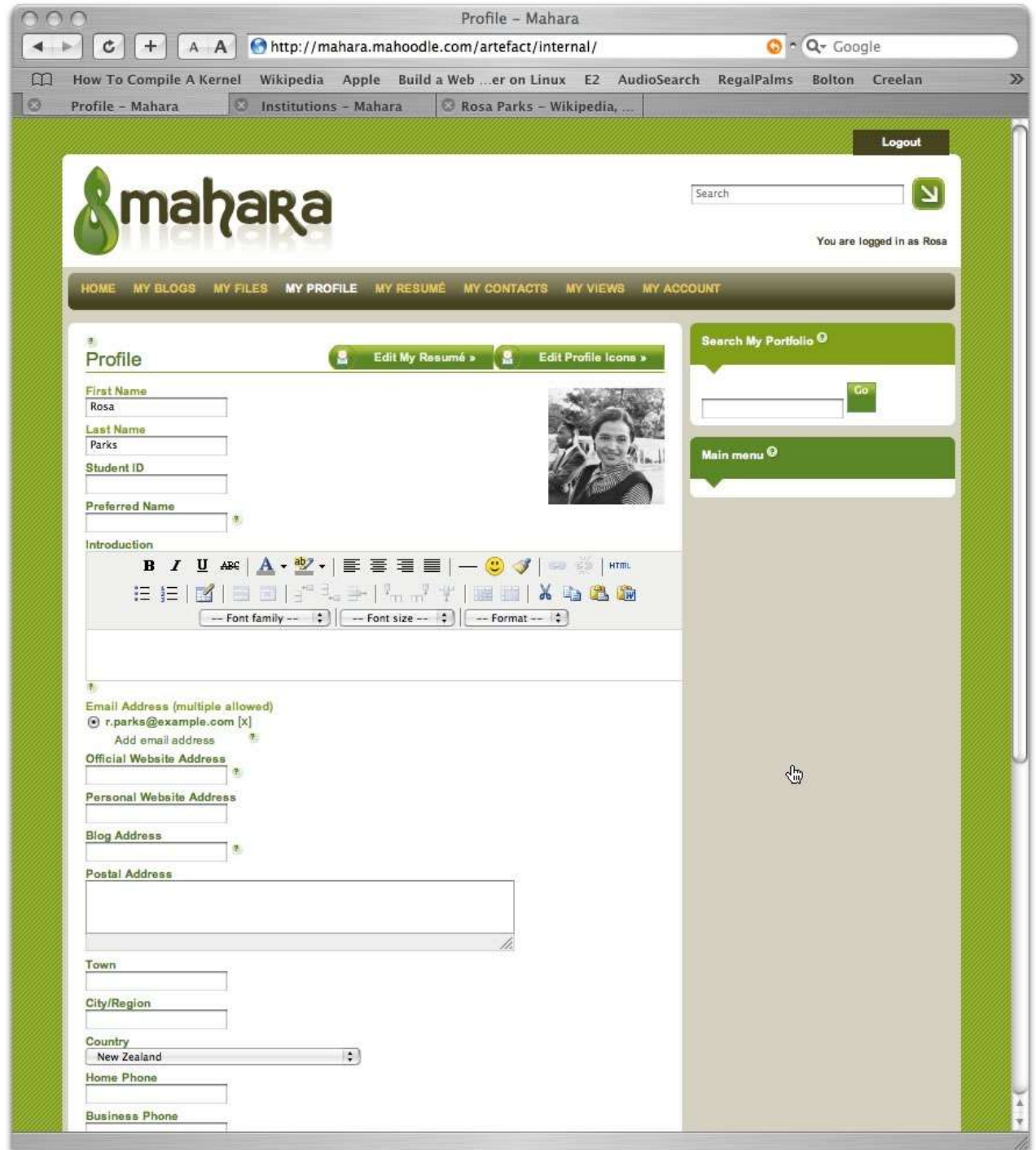
# Mahoodle://Integrating Mahara with Moodle

## 2://Enable SSO: Moodle

Click on “My Profile” to visit the user details for Rosa Parks. Note that the image that I uploaded to Rosa’s Moodle profile has been carried over to Mahara along with her other details.

In these first two sections, we enabled networking on both Moodle and Mahara, and we configured Mahara to accept users who SSO via a Moodle.

In the next section, we’ll configure Mahara to allow Moodle’s users to log in directly to Mahara, or to log in via SSO, as they choose.



# Mahoodle://Integrating Mahara with Moodle

## 3://Advanced SSO: Mahara

Log on to Mahara as the admin user, and navigate to the configuration page for the institution that we created earlier.

In the pulldown menu of authentication plugins, select 'internal' and click on the 'plus sign' button beside the menu to add the internal authentication method to the auth stack.

An authentication method labelled 'Internal' will appear in the authentication stack for your institution. The configuration pop-up window doesn't appear because there are no configuration options for internal authentication.

Click on the 'up-arrow' beside 'Internal' to move it to the top of the stack.

Now - click on 'Mahoodle XMLRPC' to reopen the window displaying its configuration options.

The screenshot shows a web browser window titled 'Institutions - Mahara' with the URL <http://mahara.mahoodle.com/admin/users/institutions.php?i=mahoodle>. The page features the Mahara logo and a search bar. A navigation menu includes 'ADMIN HOME', 'CONFIGURE SITE', 'MANAGE USERS', and 'ADMINISTER EXTENSIONS'. A secondary menu shows 'Suspended Users', 'Staff Users', 'Admin Users', 'Admin Notifications', 'Institutions', 'Add Users By CSV', and 'User Search'. A green message bar states: 'Institution added successfully. Please configure an authentication plugin for this institution.'

### Administer Institutions

**Institution display name:** Mahoodle Moodle

**Authentication plugin:** Internal, Mahoodle XMLRPC, xmlrpc (+)

**Registration allowed?**  Whether users can register for the system with this institution

**Default account lifetime:** No end date (+) How long newly created user accounts will be usable for before they expire

**Default account inactivity time:** No end date (+) How long a user account will remain active without the user logging in

**Warning time for inactivity/expiry:** 1 Weeks (+) The time before user accounts are to expire or become inactive at which a warning message will be sent to them

**Locked fields:** First Name, Last Name, Student ID, Preferred Name, Introduction, Email Address (multiple allowed), Official Website Address, Personal Website Address, Blog Address, Postal Address, Town

# Mahoodle://Integrating Mahara with Moodle

## 3://Advanced SSO into Mahara

In the pulldown menu of Parent Authorities, the Internal plugin will now appear. Select 'Internal' as the parent authority for this XMLRPC instance, and click on submit.

This confirms to Mahara that users from this institution who SSO in from Moodle are also permitted to sign on directly with a username and password, and be authenticated against the internal Mahara database.

That's all we need to do here - log out of Mahara, and log into Moodle as Rosa Parks.



The screenshot shows a web browser window titled "Edit an Authority" with the Mahara logo at the top. Below the logo is the heading "Administer Authorities". The form contains the following fields and options:

Authority name	Mahoodle XMLRPC
Parent authority	internal
WWW root	http://moodle.mahoodle.c
Site name	Mahoodle Moodle
Application	Moodle
Port number	80
We SSO out	<input type="checkbox"/>
They SSO in	<input checked="" type="checkbox"/>
Update user info on login	<input checked="" type="checkbox"/>
We auto-create users	<input checked="" type="checkbox"/>
They auto-create users	<input type="checkbox"/>

At the bottom of the form are "Submit" and "Cancel" buttons.

# Mahoodle://Integrating Mahara with Moodle

## 3://Advanced SSO into Mahara

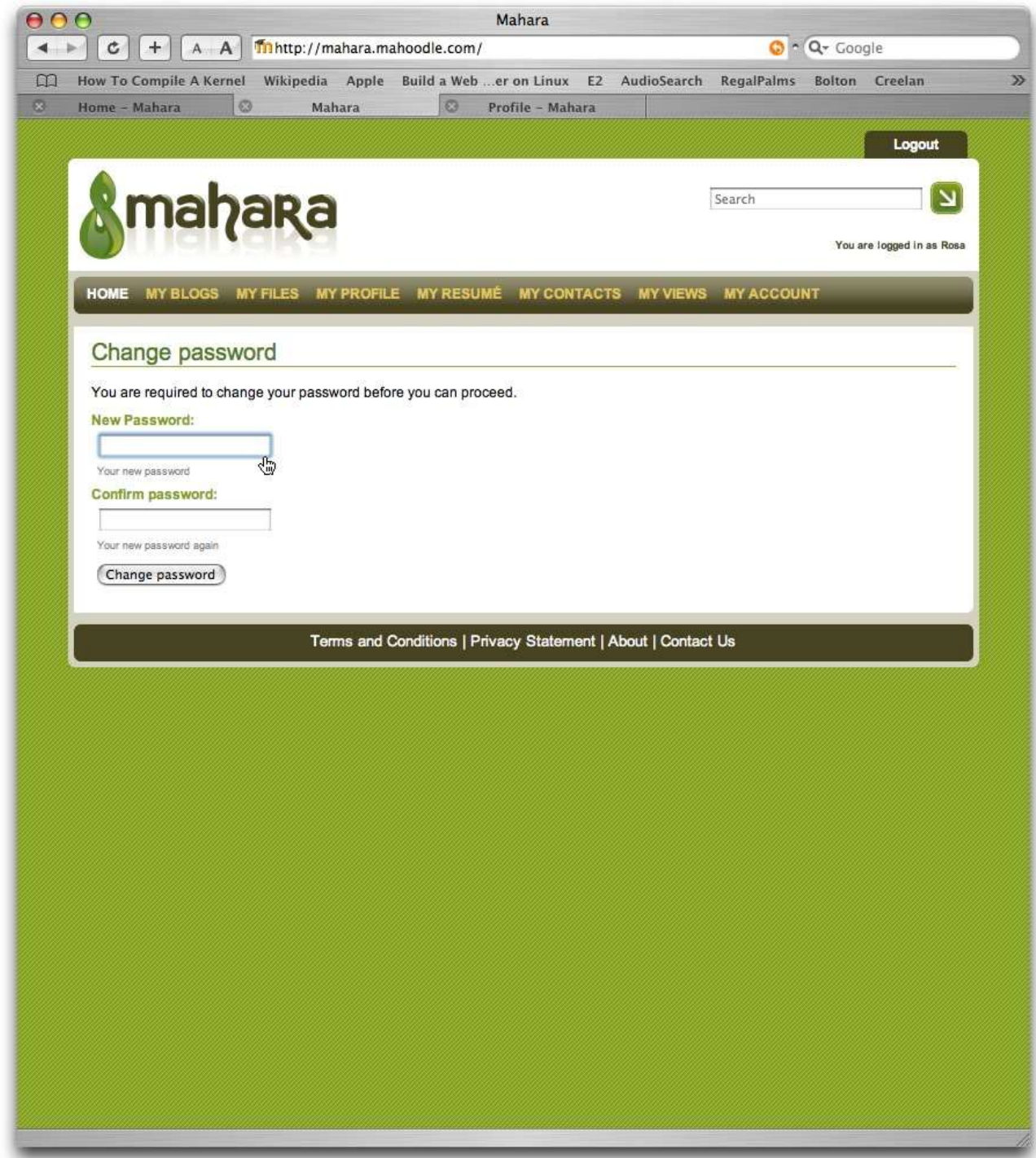
This time, when we try to SSO from Moodle to Mahara, we're prompted to 'change our password'. Mahara has noticed that we don't have a password to use with the 'internal' authentication plugin yet, and is prompting us to provide one.

Once we supply a password to Mahara, we can log out of the application and then log back in directly without going through Moodle.

If we're already logged on at Moodle, we can still click on the link in the Network Hosts block to be signed on to Mahara automatically.

Mahara ships with three authentication plugins; internal, XMLRPC and IMAP. The IMAP plugin is designed to authenticate users against an eMail server.

The application is designed to allow new authentication plugins to be added fairly simply.



# Mahoodle://Integrating Mahara with Moodle

## 4://SSO into Moodle

Log out from Moodle, and re-authenticate as the admin user. From the admin menu, click on Networking >> Peers, to view the details for your configured hosts. Our Mahara server will appear in this list.

Click on the Mahara site name, to review the host's details, and then click on 'Services' to review the configured services for this host.

Let's switch around our options - instead of publishing the SSO (Identity Provider) service, let's subscribe to it, and instead of subscribing to Mahara's SSO (Service Provider) Service, let's publish that service.

In this way, we provide an opportunity for users to access Moodle via their Mahara account. The users that could formerly SSO from Moodle to Mahara will no longer be able to do that, but they will be able to log into both Moodle and Mahara directly.

The screenshot shows a web browser window with the URL `http://moodle.mahoodle.com/admin/mnet/mnet_services.php?step=list`. The page title is "Lifeworks: Administration: Networking: Peers". The left sidebar contains a navigation menu with categories like "Front Page", "Server", "Networking", "Settings", "Peers", "SSO Access Control", "Enrolments", "XML-RPC hosts", "Reports", and "Miscellaneous". Below the menu is a search box and an "Admin bookmarks" section with a "bookmark this page" link.

The main content area displays the configuration for the "Peers" service. It lists several services with their descriptions and dependencies:

- Subscribe to this service to be able to enrol your students in courses on Mahara.**
  - *Dependency:* You must also **subscribe** to the SSO (Service Provider) service on Mahara.
  - *Dependency:* You must also **publish** the SSO (Identity Provider) service to Mahara. Publish  
 Subscribe
- SSO (Identity Provider)**  
Publish this service to allow your users to roam to the Mahara Moodle site without having to re-login there.
  - *Dependency:* You must also **subscribe** to the SSO (Service Provider) service on Mahara. Publish  
 Subscribe
- Subscribe to this service to allow authenticated users from Mahara to access your site without having to re-login.**
  - *Dependency:* You must also **publish** the SSO (Service Provider) service to Mahara. Publish  
 Subscribe
- SSO (Service Provider)**  
Publish this service to allow authenticated users from Mahara to access your site without having to re-login.
  - *Dependency:* You must also **subscribe** to the SSO (Identity Provider) service on Mahara. Publish  
 Subscribe
- Subscribe to this service to allow your users to roam to the Mahara Moodle site without having to re-login there.**
  - *Dependency:* You must also **publish** the SSO (Identity Provider) service to Mahara. Publish  
 Subscribe

At the bottom of the page, there is a "Save changes" button with a mouse cursor hovering over it.

# Mahoodle://Integrating Mahara with Moodle

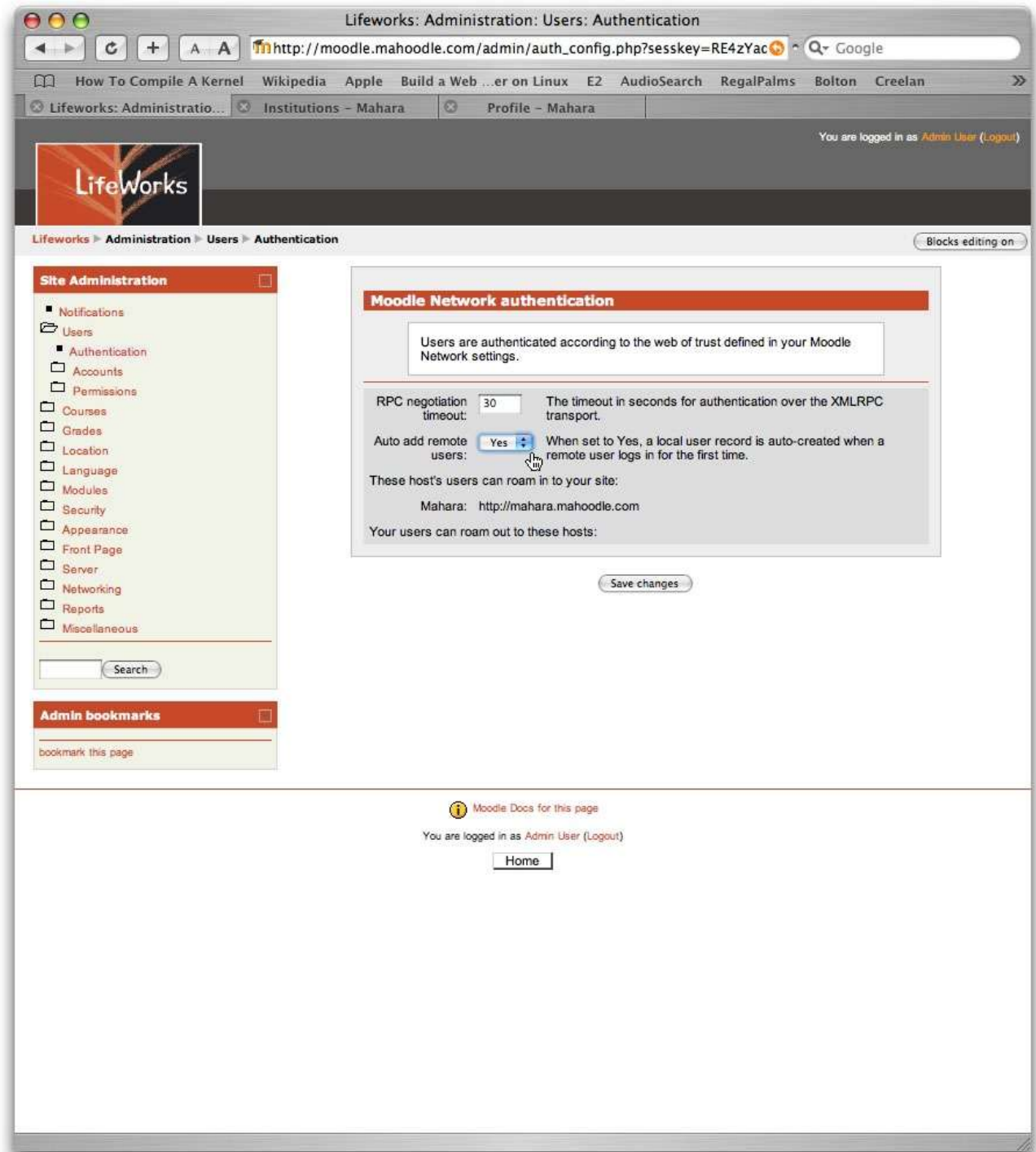
## 4://SSO into Moodle

From the admin menu, click on Users >> Authentication, and click on Moodle Network Authentication's details link, to review the details for that plugin.

In the pulldown menu, choose 'Yes' for "Auto add remote users". You can see that the plugin reports that "These hosts' users can roam into your site", and that our Mahara host is listed there.

Now we should be ready to create a user account on Mahara, and use it to SSO to Moodle. We could use the Rosa Parks record on Mahara, but on arriving at Moodle for the first time, Moodle would create another user record for Rosa, leading to confusion.

This is a result of the two applications reversing the direction in which their users SSO. To accomplish this in a production environment would require careful planning.



The screenshot shows a web browser window displaying the Moodle administration interface. The browser's address bar shows the URL: `http://moodle.mahoodle.com/admin/auth_config.php?sesskey=RE4zYac`. The page title is "Lifeworks: Administration: Users: Authentication".

The interface is divided into several sections:

- Site Administration:** A sidebar menu on the left with categories like Notifications, Users, Authentication, Accounts, Permissions, Courses, Grades, Location, Language, Modules, Security, Appearance, Front Page, Server, Networking, Reports, and Miscellaneous. A search box is located at the bottom of this menu.
- Admin bookmarks:** A section at the bottom left with a "bookmark this page" link.
- Moodle Network authentication:** The main content area, titled "Moodle Network authentication". It contains a message: "Users are authenticated according to the web of trust defined in your Moodle Network settings." Below this, there are several settings:
  - RPC negotiation timeout:** A text input field containing "30" and a label: "The timeout in seconds for authentication over the XMLRPC transport."
  - Auto add remote users:** A dropdown menu currently set to "Yes". A tooltip is visible over the dropdown, stating: "When set to Yes, a local user record is auto-created when a remote user logs in for the first time."
  - These host's users can roam in to your site:** A section with a label "Mahara:" and a value "http://mahara.mahoodle.com".
  - Your users can roam out to these hosts:** An empty section.
- Save changes:** A button at the bottom right of the settings area.

At the bottom of the page, there is a Moodle logo and the text "Moodle: Docs for this page". Below that, it says "You are logged in as Admin User (Logout)" and a "Home" button.



# Mahoodle://Integrating Mahara with Moodle

## 4://SSO into Moodle

Log into Mahara as the admin user, and navigate to the config options for the institution we created earlier. Open the XMLRPC configuration window, and reverse the checkboxes so that 'We SSO out' and 'They auto-create users' are both checked.



The screenshot shows a web browser window titled "Edit an Authority" with the Mahara logo at the top. Below the logo is the heading "Admininster Authorities". The main content area contains a form with the following fields and values:

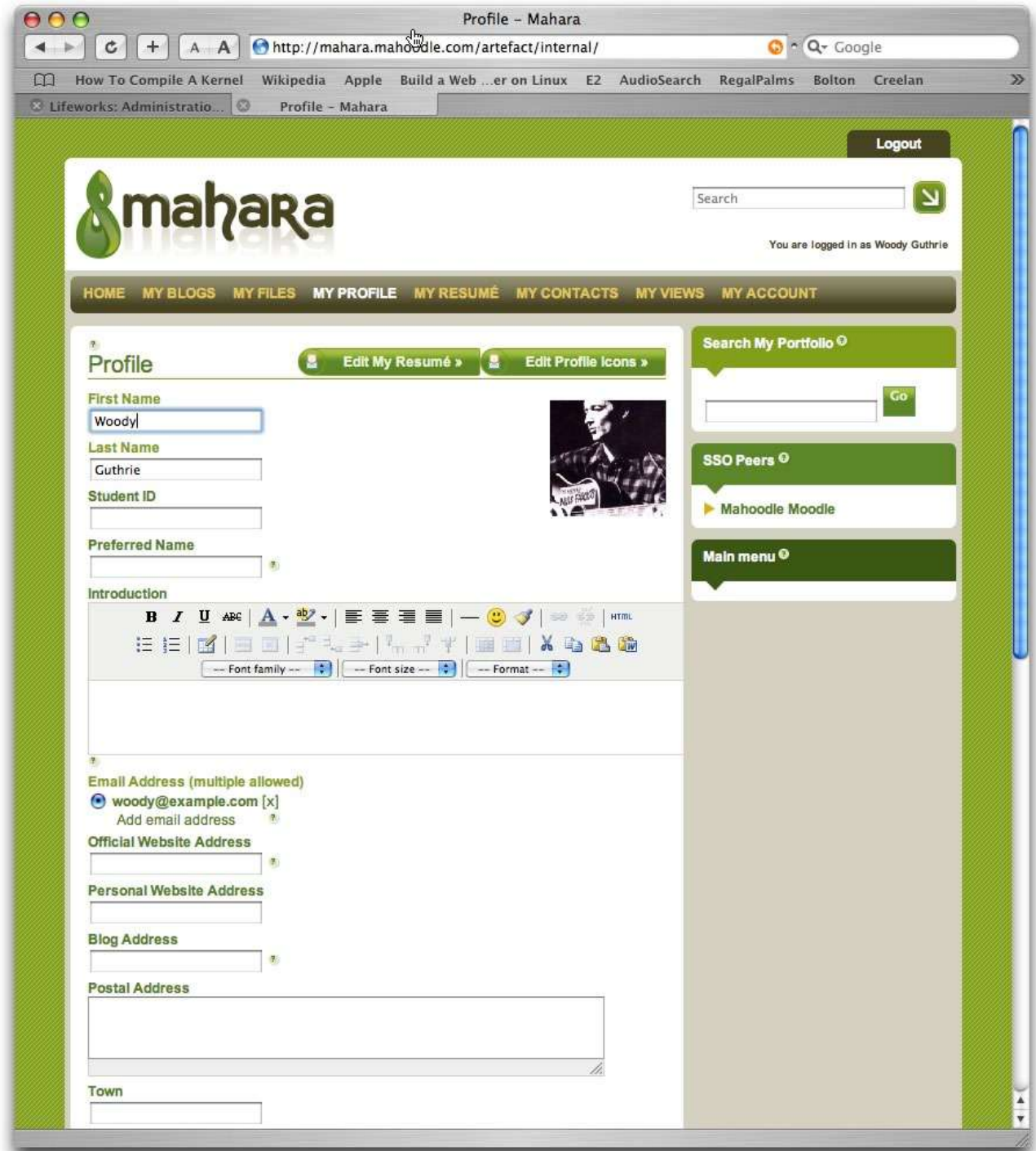
Authority name	Mahoodle XMLRPC
Parent authority	internal
WWW root	http://moodle.mahoodle.c
Site name	Mahoodle Moodle
Application	Moodle
Port number	80
We SSO out	<input checked="" type="checkbox"/>
They SSO in	<input type="checkbox"/>
Update user info on login	<input type="checkbox"/>
We auto-create users	<input type="checkbox"/>
They auto-create users	<input checked="" type="checkbox"/>

At the bottom of the form are two buttons: "Submit" and "Cancel".

# Mahoodle://Integrating Mahara with Moodle

## 4://SSO into Moodle

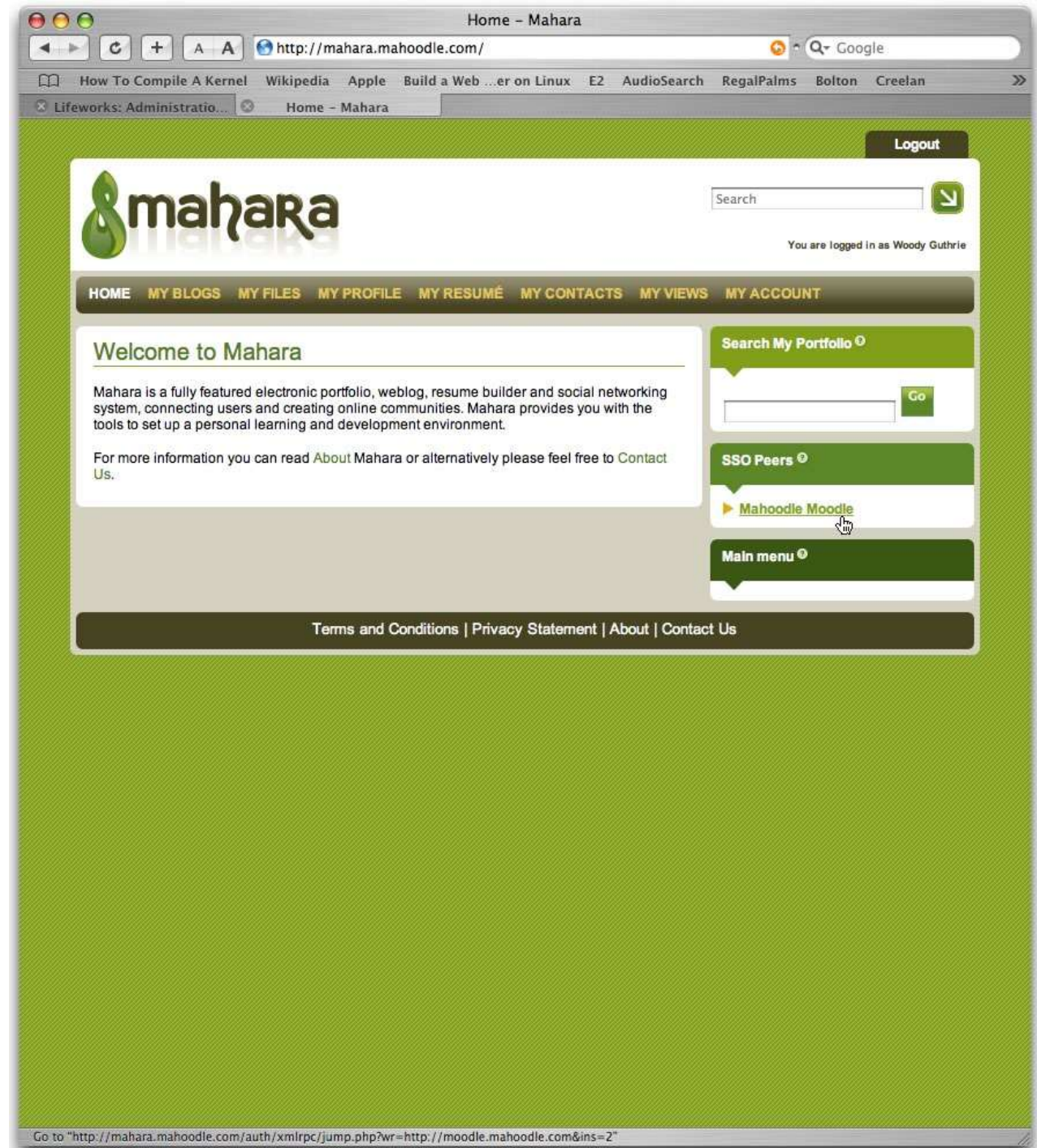
Create a new user record - I've created a record for Woody Guthrie. Log off from the admin account, and log back in as the new user you have just created. Make sure that you've signed out from Moodle.



# Mahoodle://Integrating Mahara with Moodle

## 4://SSO into Moodle

Note that an SSO Peers block has appeared on the welcome page, and it contains a link to the Moodle site. Click on the link to be signed on at Moodle.



The screenshot shows a web browser window displaying the Mahara website. The browser's address bar shows the URL <http://mahara.mahoodle.com/>. The page features a green and white color scheme. At the top right, there is a "Logout" button. Below the Mahara logo, a search bar is visible with the text "You are logged in as Woody Guthrie". A navigation menu includes links for HOME, MY BLOGS, MY FILES, MY PROFILE, MY RESUMÉ, MY CONTACTS, MY VIEWS, and MY ACCOUNT. The main content area is titled "Welcome to Mahara" and contains a paragraph describing Mahara as a fully featured electronic portfolio, weblog, resume builder, and social networking system. Below this, there is a link to "About Mahara" and a "Contact Us" link. On the right side, there are three widget boxes: "Search My Portfolio" with a search input and a "Go" button; "SSO Peers" which contains a link to "Mahoodle Moodle" with a mouse cursor hovering over it; and "Main menu". At the bottom of the page, there is a footer with links for "Terms and Conditions", "Privacy Statement", "About", and "Contact Us". The browser's status bar at the bottom shows the URL: [Go to "http://mahara.mahoodle.com/auth/xmlrpc/jump.php?wr=http://moodle.mahoodle.com&ins=2"](http://mahara.mahoodle.com/auth/xmlrpc/jump.php?wr=http://moodle.mahoodle.com&ins=2)

# Mahoodle://Integrating Mahara with Moodle

## 4://SSO into Moodle

At this point, you should find yourself signed on at Moodle as Woody Guthrie.

The screenshot shows a web browser window with the following elements:

- Browser Title:** Lifeworks e-Campus
- Address Bar:** http://moodle.mahoodle.com/
- Page Header:** Lifeworks logo and "You are logged in as Woody Guthrie from Mahara (Logout)" with a language dropdown set to "English (en)".
- My courses:** A section with a red header containing a course titled "How to configure Moodle" with the description: "An introduction to installing and configuring a Moodle installation to support your learning activities."
- Calendar:** A widget for August 2007 showing a grid of dates from 1 to 31.
- Footer:** "You are logged in as Woody Guthrie from Mahara (Logout)" and the Moodle logo.

# Mahoodle://Integrating Mahara with Moodle

## A word on Authentication Plugins

An institution can have any number of authenticating authorities, and Mahara will try to authenticate users against those one at a time until it hits upon an authority that knows the user. An authority could be any system that already stores username and password information for your users, for example, a student management system, an email server, an LDAP server or just a plain old database.

Mahara may be able to access the same authority by different means, for example, if your user data is in a Moodle database, a database-authentication plugin could access that database and compare the credentials your users supply to the values in Moodle.

In this example, the Moodle database is the canonical or 'parent' store of data for username/password information.

Users who login to Mahara, and are authenticated against a Moodle database, might also log into Moodle and click on a special link to be automatically signed on to Mahara. This feature is provided by a Mahara authentication plugin called 'xmlrpc', and because the users' credentials are stored in the Moodle database, the database authentication plugin is said to be the parent of the xmlrpc authentication plugin.

Authentication stacks are an advanced topic that won't be relevant to most Moodle and Mahara deployments. We cover this topic further in chapter 4.

