

For Linux and MacOS

1. System requirements
2. Database server
3. Portal server
4. Download server
5. Streaming server

You can watch our videotutorial (<https://lecture2go.uni-hamburg.de/l2go/-/get/v/21978>) with the following installation instructions.

1. System requirements

Lecture2Go runs on Linux and Mac systems. The required hardware is depending on the usage of the portal. The following configuration has been implemented at the University of Hamburg since year 2010.

Web server

Operating system - SUSE 11 (x86_64)
CPU – 16 x Intel(R) Xeon(R) E5640 @ 2.67 GHz
RAM – 8 GB
Hard drive – 500 GB

Download server

Operating system - SUSE 11 (x86_64)
CPU – 16 x Intel(R) Xeon(R) E5640 @ 2.67 GHz
RAM – 8 GB
Hard drive – 500 GB
LAN – 1 Gb

2. Database server

For this setup we will use a Maria database. At this point we do not provide any installation instructions for MariaDB because you can find very good guides on the official website of the software distributor as well as on numerous other websites. After setting up the server create a user account which will be used to access the MariaDB server. These login parameters will be required in section 3 - username (*dbuser*) and password (*dbpassword*).

3. Portal server

You have to be a root user for this setup! Create the directory `/usr/local/l2go` (`chmod 755 /usr/local/l2go` for Mac) and then unpack the downloaded file `portal-6.2-ce-ga6-master.zip` into it and rename the unpacked directory to `portal-6.2-ce-ga6`. The unzipped file `/usr/local/l2go/portal-6.2-ce-ga6/install.sql` contains all necessary tables and settings to integrate the Lecture2Go plugins in Liferay 6.2.

Import `install.sql` onto the installed MySQL database server.

Afterwards the portal software can be prepared for further installation. First edit the configuration file `portal-setup-wizard.properties`, which can be found under:

```
your-lecture2go-server:~ # cd /usr/local/l2go/portal-6.2-ce-ga6/  
your-lecture2go-server:~/portal-6.2-ce-ga6/ # joe portal-setup-wizard.properties
```

Here you enter the installation directory:

```
liferay.home=/usr/local/l2go/portal-6.2-ce-ga6
```

Now edit the configuration file `portal-ext.properties`:

```
your-lecture2go-server:~ # cd /usr/local/l2go/portal-6.2-ce-ga6/tomcat-7.0.62/webapps/  
your-lecture2go-server:~/webapps/ # joe ROOT/WEB-INF/classes/portal-ext.properties
```

Configure the general properties by modifying the following lines in the area 'General Properties':

```
##### General Properties #####  
web.server.protocol=http  
web.server.http.port=8080
```

Download

For a successful setup of a Lecture2Go video portal are the following files required:

Lecture2Go Videoportal based on Liferay 6.2 CE GA6 - download (<https://github.com/lecture2go/portal-6.2-ce-ga6/archive/master.zip>) from GitHub

MariaDB Database Server - download (<https://downloads.mariadb.org/>)

Logins

Produzentenzugang

E-Mail: producer@lecture2go.uni-hamburg.de

Passwort: 123

Koordinatorzugang

E-Mail: coordinator@lecture2go.uni-hamburg.de

Passwort: 123

Administratorenzugang

E-Mail: admin@lecture2go.uni-hamburg.de

Passwort: 123

`web.server.host=localhost`

web.server.http.port – The default port number for the tomcat application server is 8080.

web.server.host – You can define the name of your website here. For this demo installation this is "localhost".

Configure the database access by modifying the following lines in the 'Database Properties':

```
##### Database Properties #####
jdbc.default.driverClassName=org.mariadb.jdbc.Driver
jdbc.default.url=jdbc:mysql://my-mysql-server.com/portal?useUnicode=true&characterEncoding=UTF-
&useFastDateParsing=false
jdbc.default.username=dbuser
jdbc.default.password=dbpassword
```

jdbc.default.url – Replace "mysql.server.com" with the URL of your databank server.

jdbc.default.username – Enter your user name.

jdbc.default.password – Enter your databank password.

In the section 'Lecture2Go Properties', adjust the following parameters:

```
##### Lecture2Go Properties #####
lecture2go.downloadserver.root=${lecture2go.web.root}
lecture2go.media.repository=${liferay.home}/l2gomedia
lecture2go.ffmpeg.bin=/usr/local/bin/ffmpeg
lecture2go.shell.bin=/bin/bash
lecture2go.response.email.address=lecture2go@l2go.edu
lecture2go.noresponse.email.address=noresponse@l2go.edu
```

The most important settings for the installation of the plug-ins are provided with the prefix `lecture2go.*`.

lecture2go.downloadserver.root – For load balancing we recommend to use a separate the download server from the web server. Then enter here the URL of this server. Otherwise enter

`'lecture2go.downloadserver.root=${lecture2go.web.root}'`

lecture2go.media.repository – Enter the file path where the uploaded video content should be stored. The default parameter is `${liferay.home}/l2gomedia`. PLEASE NOTE, THAT THE PARENT DIRECTORY `${liferay.home}` MUST HAVE WRITE PERMISSIONS!

In order to change the following two parameters run the following commands:

```
your-lecture2go-server:~ # which ffmpeg
/usr/local/bin/ffmpeg
```

```
lecture2go.ffmpeg.bin - /usr/local/bin/ffmpeg
```

If the FFMPEG-library is not installed on your Linux system, you have to install it.

```
your-lecture2go-server:~ # which bash
/bin/bash
```

```
lecture2go.shell.bin - /bin/bash
```

After the configuration file has been filled with the necessary parameters and the MySQL server is available, you can start the portal. Proceed as follows:

```
your-lecture2go-server:~ # cd /usr/local/l2go/portal-6.2-ce-ga6/tomcat-7.0.62/bin/
your-lecture2go-server:~/usr/local/l2go/portal-6.2-ce-ga6/tomcat-7.0.62/bin # chmod 755 *
your-lecture2go-server:~/usr/local/l2go/portal-6.2-ce-ga6/tomcat-7.0.62/bin # ./startup.sh
```

Assuming you have made all necessary preparations, the portal software will be launched successfully.

The server logs can be found under `/usr/local/l2go/portal-6.2-ce-ga6/tomcat-7.0.62/logs`. The starting process will finish with a similar log output:

```
your-lecture2go-server:~ # tail -f /usr/local/l2go/portal-6.2-ce-ga6/tomcat-7.0.62/logs/catalina.out

INFO: Starting Coyote HTTP/1.1 on http-80
Jul 25, 2012 12:46:01 PM org.apache.jk.common.ChannelSocket init
INFO: JK: ajp13 listening on /0.0.0.0:8009
Jul 25, 2012 12:46:01 PM org.apache.jk.server.JkMain start
INFO: Jk running ID=0 time=0/177 config=null
Jul 25, 2012 12:46:03 PM org.apache.catalina.startup.Catalina start
INFO: Server startup in 40776 ms
12:46:49,528 INFO [PluginPackageUtil:1148] Reloading repositories
```

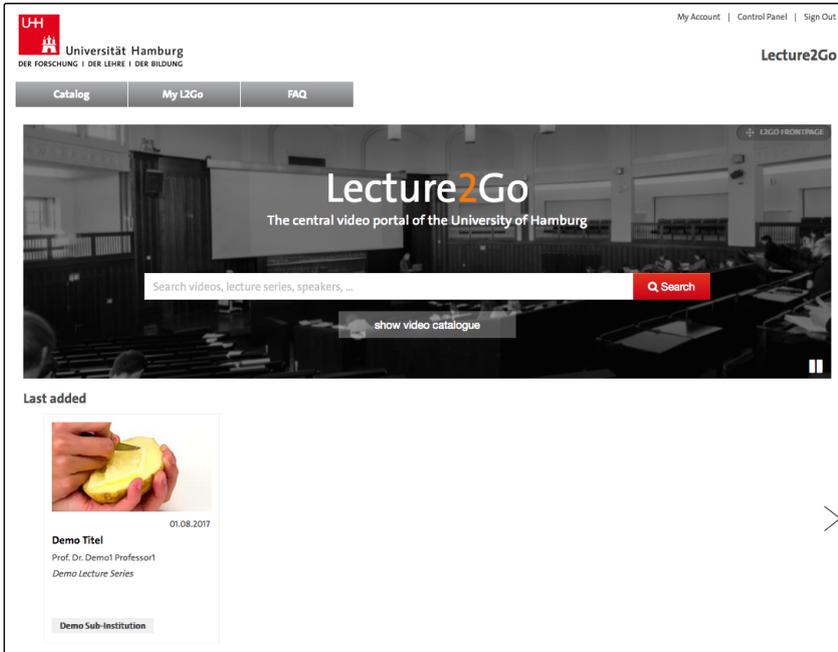
Now you have make some configurations in the Lecture2Go portal. Please call a web browser locally on the server:

```
your-lecture2go-server:~ # firefox localhost
```

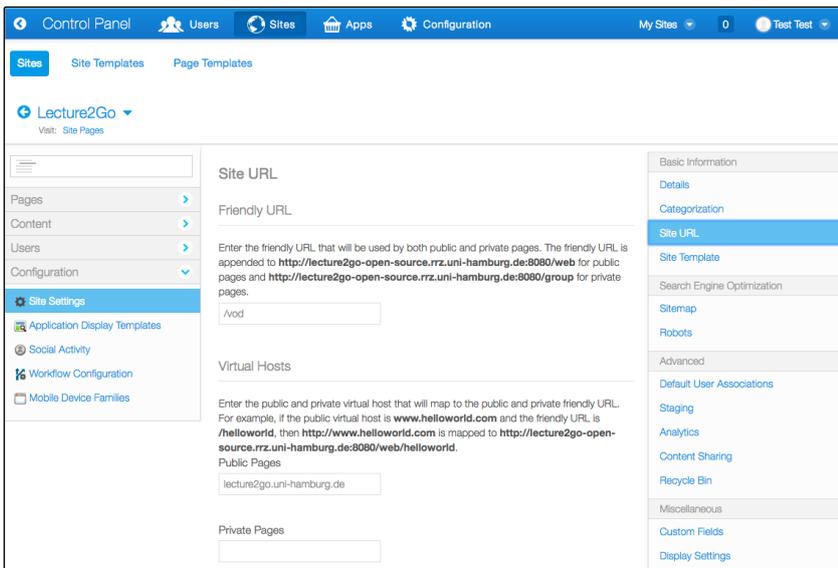
Then login as superuser - Menu "Login" (at the top right under the Lecture2Go logo) The login details are:

E-Mail: administrator@lecture2go.uni-hamburg.de

Password: 123



After logging in, click on the *Control Panel* menu in the upper right corner over the Lecture2Go logo and select the main menu "Sites" -> "Lecture2Go" -> "Configuration" -> "Site Settings" -> "Site URL". Fill in the URL of your Lecture2Go installation (*my-uni-domain.com*).



Another configuration is necessary in the main menu settings. Enter the individual parameter as shown in the figure below "Sites" -> "Lecture2Go" -> "Configuration" -> "Portal Settings".

After you have completed these configurations, your portal should now be reachable under your specified URL (e.g. <http://my-uni-domain.com>).

4. Download server

In order for the uploaded media content - in `/path-to-repository/l2gomedia` - to be visible for the download server, this directory must be imported e.g. via NFS and also mounted on `/path-to-repository/l2gomedia` (If changed beforehand use new directory).

Install and activate the Tomcat Web server (e.g. SLES 11 using the installation tool YAST).

Afterwards transfer the Lecture2Go download servlet into the webapps directory of the Tomcat server on the download machine. The servlet is located in the webapps directory of Lecture2Go portal server (see section 3).

Copy the directory:

```
your-lecture2go-portalserver:~ # scp -r -P <Portnumber> /usr/local/l2go/portal-6.2-ce-ga6/webapps/servlet-file-download
username@your-lecture2go-downloadserver:tomcat-base/webapps/
```

To configure the servlet for database access, open the file `/tomcat-base/webapps/servlet-file-download/WEB-INF/web.xml` and enter the following parameters (see next figure):

```
repositoryRoot = /path-to-repository/l2gomedia
downloadServerName = my-download-server.com
```

Restart the Tomcat server so the new configurations are made effective.

```
<?xml version="1.0" encoding="UTF-8"?>
<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns="http://java.sun.com/xml/ns/javaee"
  xsi:schemaLocation="http://java.sun.com/xml/ns/javaee http://java.sun.com/xml/ns/javaee/web-app_3_0.xsd"
  version="3.0">
  <display-name>servlet-file-download</display-name>
  <welcome-file-list>
    <welcome-file>index.html</welcome-file>
    <welcome-file>index.htm</welcome-file>
    <welcome-file>index.jsp</welcome-file>
    <welcome-file>default.html</welcome-file>
    <welcome-file>default.htm</welcome-file>
    <welcome-file>default.jsp</welcome-file>
  </welcome-file-list>
  <servlet>
    <display-name>Lecture2GoDownload</display-name>
    <servlet-name>Lecture2GoDownload</servlet-name>
    <servlet-class>DownloadManager</servlet-class>
    <init-param>
      <param-name>repositoryRoot</param-name>
      <param-value>/path-to-repository/l2gomedia</param-value>
    </init-param>
    <init-param>
      <param-name>downloadServerName</param-name>
      <param-value>localhost</param-value>
    </init-param>
  </servlet>
  <servlet-mapping>
    <servlet-name>Lecture2GoDownload</servlet-name>
    <url-pattern>/getFile</url-pattern>
  </servlet-mapping>
</web-app>
```

You must activate the following apache modules:

```
proxy_ajp
proxy_balancer
proxy
proxy_connect
proxy_ftp
proxy_http
```

Enter the line at the bottom of the configuration file `/etc/apache2/httpd.conf`:

```
ProxyPass /servlet-file-download ajp://lecture2go-download-server-name.de:8009/servlet-file-download
```

Start the Apache2. In the `htdocs` directory from Apache2 create the following symbolic links:

```
lecture2go-download-server:~ # cd /srv/www/htdocs
lecture2go-download-server:/srv/www/htdocs # ln -s /path-to-repository/l2gomeia/abo/ abo
lecture2go-download-server:/srv/www/htdocs # ln -s /path-to-repository/l2gomeia/vh_000/ vh_000
```

All media files under the `/path-to-repository/l2gomeia/vh_000/` are now theoretically visible and reachable over HTTP. This only refers to content on the Lecture2Go video portal that has been released as downloadable. Media, which may not be downloaded, are protected by `.htaccess` files.

5. Streaming server

The streaming server is an options component. At this point it is important to mention that due to better load distribution the server should be installed on a separate machine. For further information about connecting your streaming server with Lecture2Go please contact our support team.