



## Installation of Apache OpenMeetings 3.1.3 on openSUSE Leap 42.2

This tutorial is made based on fresh installations of

**openSUSE-Leap-42.2-DVD-x86\_64.iso**

It is tested with positive result. We will use the Apache's binary version OpenMeetings 3.1.3 stable, that is to say will suppress his compilation. It is done step by step.

17-11-2016

Starting...

1)

----- Update Operative System -----

Update operative system:

`zypper refresh`

`zypper update`

2)

----- Installation of Oracle Java 1.8 -----

Java **1.8** it is necessary to work OpenMeetings **3.1.3**. So, we install Oracle Java 1.8. Open Java gives an error in some OpenMeetings function. It is tested:

```
cd /opt
```

Download the file:

(All in one line only. 1<sup>a</sup> and 2<sup>a</sup> without space between them. A space to the 3<sup>a</sup>)

```
wget --no-cookies --no-check-certificate --header "Cookie: gpw_e24=http%3A%2F%2Fwww.oracle.com%2F; oraclelicense=accept-securebackup-cookie" "http://download.oracle.com/otn-pub/java/jdk/8u101-b13/jdk-8u101-linux-x64.rpm"
```

...and install it:

```
zypper install -y jdk-8*.rpm
```

```
zypper install update-alternatives
```

We do to Oracle, the java system default:

```
update-alternatives --install /usr/bin/java java /usr/java/jdk1.8.0_101/bin/java 1551
```

```
update-alternatives --install /usr/bin/javadoc javadoc /usr/java/jdk1.8.0_101/bin/javadoc 1551
```

```
update-alternatives --install /usr/bin/jar jar /usr/java/jdk1.8.0_101/bin/jar 1551
```

```
update-alternatives --install /usr/bin/javap javap /usr/java/jdk1.8.0_101/bin/javap 1551
```

```
update-alternatives --install /usr/bin/javac javac /usr/java/jdk1.8.0_101/bin/javac 1551
```

```
update-alternatives --install /usr/bin/javah javah /usr/java/jdk1.8.0_101/bin/javah 1551
```

```
update-alternatives --install /usr/bin/jarsigner jarsigner /usr/java/jdk1.8.0_101/bin/jarsigner 1551
```

Maybe is installed different versions of Java. We select the just installed Oracle Java:

```
update-alternatives --config java
```

And to see if the selected version is active:

```
java -version
```

3)

### ----- Installation of LibreOffice -----

OpenMeetings need LibreOffice to convert to pdf, the uploaded office files.

Maybe it is installed, but for iso server:

```
zypper install -y libreoffice
```

4)

----- **Installation of necessary packages and libraries** -----

We install packages and libraries that we'll need later:

(Only one line with space between both)

```
zypper install -y gcc ghostscript unzip freetype freetype-devel ncurses ncurses-devel make libz1  
zlib-devel libtool bzip2 file-roller git autoconf automake pkg-config nmap nano
```

5)

----- **Installation ImageMagick, Sox and Swftools** -----

**ImageMagick**, will work with images files jpg, png, gif, etc. We install it and some librarie:

```
zypper install -y ImageMagick giflib-devel
```

**Sox**, work the sound. Install it:

```
zypper install -y sox
```

**Swftools**. LibreOffice convert to pdf the uploaded office files, and Swftools convert these pdf to swf (flash file), that later will show in the whiteboard. Also convert jpg2swf, png2swf, gif2swf, etc. Don't install a newer version, surely have not pdf2swf.

```
zypper install -y swftools
```

...block the version to prevent changes, because this repo version have pdf2swf:

```
zypper al swftools
```

6)

----- **Installation of Adobe Flash Player** -----

OpenMeetings even need Adobe Flash Player for rooms.

Add Adobe repo and install it:

```
sudo zypper ar --check --refresh http://linuxdownload.adobe.com/linux/x86_64/ adobe  
sudo zypper se -s -r adobe
```

(Only one line without space between both)

```
sudo rpm -ivh http://linuxdownload.adobe.com/adobe-release/adobe-release-x86_64-1.0-1.noarch.rpm
```

```
sudo rpm --import /etc/pki/rpm-gpg/RPM-GPG-KEY-adobe-linux
```

```
sudo zypper install flash-plugin
```

7)

#### ----- Installation of Jodconverter -----

Jodconverter participate in the process to convert uploaded files.

```
cd /opt
```

(Only one line without space between both)

```
wget https://storage.googleapis.com/google-code-archive-downloads/v2/code.google.com/jodconverter/jodconverter-core-3.0-beta-4-dist.zip
```

```
unzip jodconverter-core-3.0-beta-4-dist.zip
```

8)

#### ----- Compilation of FFmpeg -----

FFmpeg work video. Will install paquets and libraries.

```
zypper install -y glibc imlib2 imlib2-devel mercurial cmake
```

```
zypper install -y freetype2-devel libfreetype6 curl git
```

```
zypper install -y libogg-devel libtheora-devel libvorbis-devel libvpx-devel
```

This ffmpeg compilation is based in this url, updated to 17-11-2016:

<https://trac.ffmpeg.org/wiki/CompilationGuide/Centos>

The result of any recording we do in OpenMeetings, will be in avi, flv, mp4 and ogg formats. I made a script that will download, compile and install ffmpeg.

Download the script:

```
cd /opt
```

(Only one line without space between both)

```
wget https://cwiki.apache.org/confluence/download/attachments/27838216/ffmpeg-opensuse421-2.sh
```

...concede permission of execution:

```
chmod +x ffmpeg-opensuse421-2.sh
```

...and run it, be connected to Internet:

```
./ffmpeg-opensuse421-2.sh
```

Will spend about 25 minutes. When finish, will announce it with this text:

**FFMPEG Compilation is Finished!**

Then, please, go to **step 9**).

But if you prefer copy and paste, i **don't advise**, here are the commands script:

```
nano /opt/ffmpeg-opensuse421.sh
```

...copy the green text **from here**:

```
# FFmpeg compilation for openSUSE Leap 42.1
# Alvaro Bustos, thanks to Hunter.
# Updated 17-11-2016
# Install libraries

zypper install -y autoconf automake cmake freetype-devel gcc gcc-c++ git libtool make mercurial
nasm pkgconfig zlib-devel

# Install yasm from repos
zypper install -y yasm

# Create a temporary directory for sources.
SOURCES=$(mkdir ~/ffmpeg_sources)
cd ~/ffmpeg_sources

# Download the necessary sources.
#git clone --depth 1 git://git.videolan.org/x264
curl -#LO ftp://ftp.videolan.org/pub/x264/snapshots/last_stable_x264.tar.bz2
hg clone https://bitbucket.org/multicoreware/x265
git clone --depth 1 git://git.code.sf.net/p/opencore-amr/fdk-aac
curl -L -O http://downloads.sourceforge.net/project/lame/lame/3.99/lame-3.99.5.tar.gz
git clone http://git.opus-codec.org/opus.git
curl -O http://downloads.xiph.org/releases/ogg/libogg-1.3.2.tar.gz
curl -O http://downloads.xiph.org/releases/vorbis/libvorbis-1.3.5.tar.gz
```

```
wget http://downloads.xiph.org/releases/theora/libtheora-1.1.1.tar.gz
git clone --depth 1 https://chromium.googlesource.com/webm/libvpx.git
git clone --depth 1 git://source.ffmpeg.org/ffmpeg

# Unpack files
for file in `ls ~/ffmpeg_sources/*.tar.*`; do
tar -xvf $file
done

cd x264-*/
./configure --prefix="$HOME/ffmpeg_build" --bindir="$HOME/bin" --enable-static && make &&
make install && make distclean; cd ..

cd x265/build/linux
cmake -G "Unix Makefiles" -DCMAKE_INSTALL_PREFIX="$HOME/ffmpeg_build"
-DENABLE_SHARED:bool=off ../../source && make && make install; cd ~/ffmpeg_sources

cd fdk-aac
autoreconf -fiv && ./configure --prefix="$HOME/ffmpeg_build" --disable-shared && make &&
make install && make distclean; cd ..

cd lame-*/
./configure --prefix="$HOME/ffmpeg_build" --bindir="$HOME/bin" --disable-shared --enable-
nasm && make && make install && make distclean; cd ..

cd opus
autoreconf -fiv && ./configure --prefix="$HOME/ffmpeg_build" --disable-shared && make &&
make install && make distclean; cd ..

cd libogg-*/
./configure --prefix="$HOME/ffmpeg_build" --disable-shared && make && make install &&
make distclean; cd ..

cd libvorbis-*/
LDFLAGS="-L$HOME/ffmeg_build/lib64" CPPFLAGS="-I$HOME/ffmpeg_build/include"
./configure --prefix="$HOME/ffmpeg_build" --with-ogg="$HOME/ffmpeg_build" --disable-shared
&& make && make install && make distclean; cd ..

cd libtheora-*/
./configure --prefix="$HOME/ffmpeg_build" --with-ogg="$HOME/ffmpeg_build" --disable-
examples --disable-shared --disable-sdltest --disable-vorbistest && make && make install; cd ..

cd libvpx
./configure --prefix="$HOME/ffmpeg_build" --disable-examples && make && make install &&
make clean; cd ..
```

```
cd ffmpeg
PKG_CONFIG_PATH="$HOME/ffmpeg_build/lib/pkgconfig" ./configure
--prefix="$HOME/ffmpeg_build" --extra-cflags="-I$HOME/ffmpeg_build/include" --extra-
ldflags="-L$HOME/ffmpeg_build/lib" --bindir="$HOME/bin" --pkg-config-flags="--static"
--enable-gpl --enable-nonfree --enable-libfdk_aac --enable-libfreetype --enable-libmp3lame
--enable-libopus --enable-libvorbis --enable-libvpx --enable-libx264 --enable-libx265 --enable-
libtheora && make && make install && make distclean && hash -r; cd ..
```

```
cd ~/bin
cp ffmpeg ffprobe ffserver lame x264 /usr/local/bin
```

```
cd ~/ffmpeg_build/bin
cp x265 /usr/local/bin
```

```
echo "FFMPEG Compilation is Finished!"
```

...to here.

Concede permission of execution:

```
chmod +x /opt/ffmpeg-opensuse421.sh
```

```
cd /opt
```

Now be connected to Internet, run the script, and wait some long minutes while the compilation:

```
./ffmpeg-opensuse421.sh
```

All the compiled files will be installed on: /usr/local/bin

9)

#### ----- Installation of MariaDB data server -----

MariaDB is the data server.

We install it:

```
zypper install -y mariadb mariadb-tools
```

...and run mariadb:

```
systemctl start mysql.service
```

Give a password to MariaDB root . Please, modify **new-password** by your own:

```
mysqladmin -u root password new-password
```

Make a database with his own user for OpenMeetings:

```
mysql -u root -p
```

...will ask for the root password that we have just chosen:

```
MariaDB [(none)]> CREATE DATABASE open313 DEFAULT CHARACTER SET 'utf8';
```

With this command we has created a database called open313.  
Now we create a user with all permission on this database.

(Only one line with space between both)

```
MariaDB [(none)]> GRANT ALL PRIVILEGES ON open313.* TO 'hola'@'localhost'  
IDENTIFIED BY '123456' WITH GRANT OPTION;
```

- \* open313 .....is the database name.
- \* hola .....is the user name for the database.
- \* 123456 .....is the password of this user.

You can change the data...but remember it! Later we'll need it.  
Now, we leave MariaDB:

```
MariaDB [(none)]> quit
```

## 10)

### ----- Installation of OpenMeetings -----

We'll install OpenMeetings in /opt/red5313. All the following information will be based on this directory.

Make the folder:

```
mkdir /opt/red5313
```

```
cd /opt/red5313
```

...and download the OpenMeetings file:

```
wget http://ftp.cixug.es/apache/openmeetings/3.1.3/bin/apache-openmeetings-3.1.3.zip
```

```
unzip apache-openmeetings-3.1.3.zip
```

...save the unloaded file to /opt:

```
mv apache-openmeetings-3.1.3.zip /opt
```



Download and install the connector file between OpenMeetings and MariaDB:

```
cd /opt
```

(Only one line without space between both)

```
wget http://repo1.maven.org/maven2/mysql/mysql-connector-java/5.1.39/mysql-connector-java-5.1.39.jar
```

...and copy it to where must be:

```
cp /opt/mysql-connector-java-5.1.39.jar /opt/red5313/webapps/openmeetings/WEB-INF/lib
```

Now we are going to configure OpenMeetings for our database in MariaDB:

```
nano /opt/red5313/webapps/openmeetings/WEB-INF/classes/META-INF/mysql_persistence.xml
```

**Modify on line 71:**

```
, Url=jdbc:mysql://localhost:3306/openmeetings_3_1?
```

...to

```
, Url=jdbc:mysql://localhost:3306/open313?
```

...it is the name of the database that we did initially.

**Modify on line 76:**

```
, Username=root
```

...to

```
, Username=hola
```

...is the user that we did initially for the database.

**Modify on line 77:**

```
, Password="" />
```

...to

```
, Password=123456" />
```

...it is the password that we did initially for the user "hola" in the database.

Logically, if initially you choose another name and password for the database, you will to change them here.

Push **Ctrl+x**, **Y** and **Enter** in the keyboard, to save and leave nano.

We protect the access to the file:

(Only one line without space between both)

```
chmod 640 /opt/red5313/webapps/openmeetings/WEB-INF/classes/META-INF/mysql_persistence.xml
```

11)

----- Script to launch red5-OpenMeetings -----

We'll download the script to run red5-OpenMeetings:

```
cd /opt
```

```
wget https://cwiki.apache.org/confluence/download/attachments/27838216/red5-3
```

...copy it to where must be:

```
cp red5-3 /etc/init.d/
```

...concede execution permission:

```
chmod +x /etc/init.d/red5-3
```

If you made the installation in any other different path to /opt/red5313, please edit the script and modify the line:

```
export RED5_HOME=/opt/red5313
```

...to

```
export RED5_HOME=/your-path-installation
```

12)

## ----- Run red5-OpenMeetings -----

Restart mariadb, (be connected to Internet):

```
systemctl restart mysql.service
```

...and run red5-OpenMeetings, please, in a new window terminal (be connected to Internet):

```
/etc/init.d/red5-3 start
```

...wait till the text “**clearSessionTable: 0**” it is the last in the terminal.

Then, go with the browser to:

<http://localhost:5080/openmeetings/install>

...there will appear a page similar to this one:

**OpenMeetings**


1. **Enabling Image Upload and import to whiteboard**
  - o Install **ImageMagick** on the server, you can get more information on <http://www.imagemagick.org> regarding installation. The instructions for installation can be found there <http://www.imagemagick.org/script/binary-releases.php>, however on most linux systems you can get it via your favorite package managers (apt-get it)
2. **Enabling import of PDFs into whiteboard**
  - o Install **GhostScript** on the server, you can get more information on <http://pages.cs.wisc.edu/~ghost/> regarding installation. The instructions for installation can be found there, however on most linux systems you can get it via your favorite package managers (apt-get it).
  - o Install **SWFTools** on the server, you can get more information on <http://www.swftools.org/> regarding installation. Some of the Linux distributions already have it in there package manager see <http://packages.debian.org/unstable/utls/swftools>), the recommended version of **SWFTools** is 0.9 as prior version have a bug that does lead to wrong object dimensions in the Whiteboard
3. **Enabling import of .doc, .docx, .ppt, .pptx, ... all Office Documents into whiteboard**
  - o **OpenOffice-Service** started and listening on port 8100, see [OpenOfficeConverter](#) for details
4. **Enabling Recording and import of .avi, .flv, .mov and .mp4 into whiteboard**
  - o Install **FFMpeg**. You should get FFmpeg in an up to date copy! For Windows you can download a Build for example from <http://ffmpeg.arozcru.org/builds/> Linux or OSX Users should be able to use one of the various installation instructions on the Web. You need to enable libmp3lame!
  - o Install **SoX** <http://sox.sourceforge.net/>. You should install SoX in a up to date copy! SoX 12.xx will NOT work!

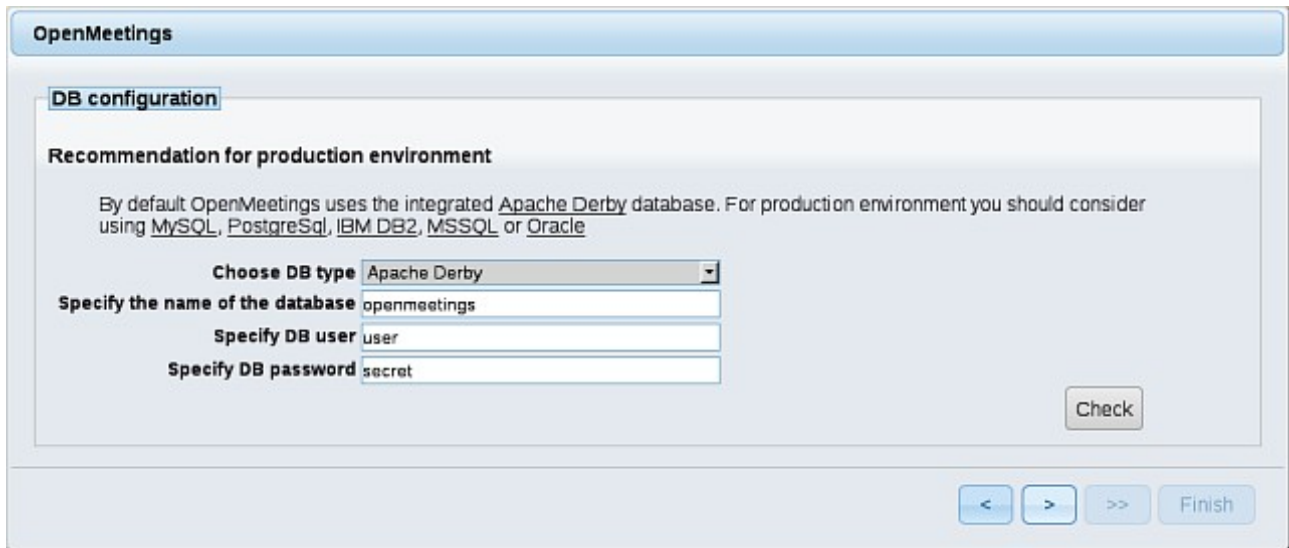
**If you have further questions or need support in installation or hosting:**

**Community-Support:**

[Mailing lists](#)

**Commercial-Support:**

...push on  (bottom), and will show the default configuration with Derby, but we employ MySQL (MariaDB):



**OpenMeetings**

**DB configuration**

**Recommendation for production environment**

By default OpenMeetings uses the integrated Apache Derby database. For production environment you should consider using MySQL, PostgreSQL, IBM DB2, MSSQL or Oracle

**Choose DB type** Apache Derby

**Specify the name of the database** openmeetings

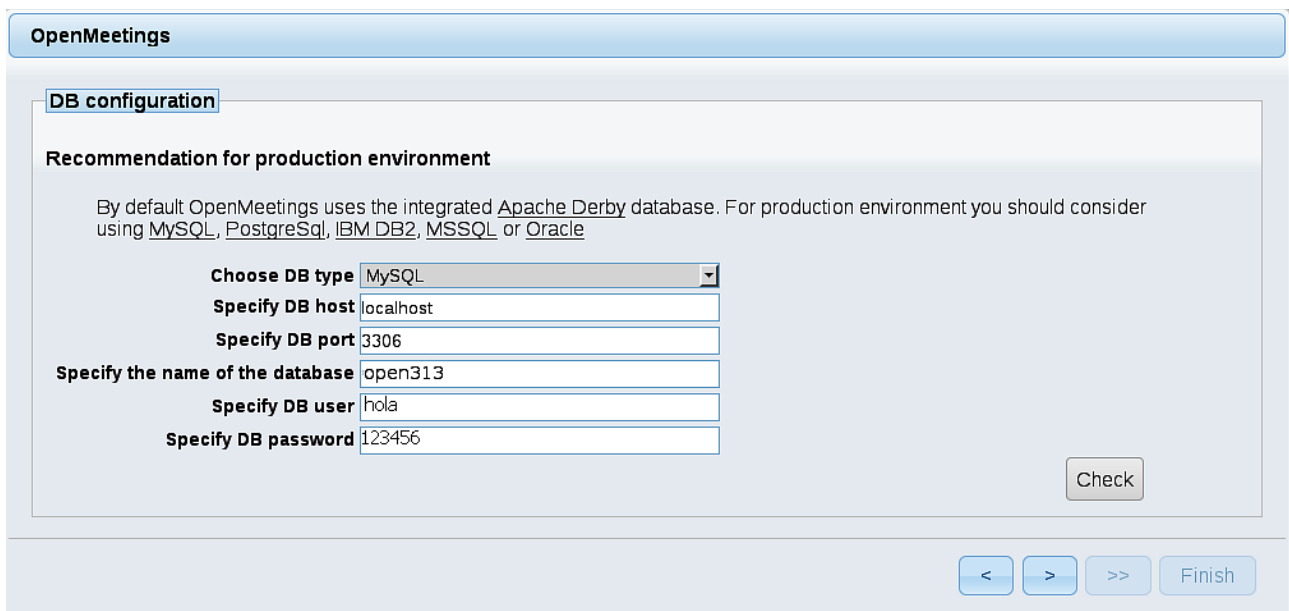
**Specify DB user** user

**Specify DB password** secret

Check

< > >> Finish

...then, scroll and **Choose DB type** to MySQL:



**OpenMeetings**

**DB configuration**

**Recommendation for production environment**

By default OpenMeetings uses the integrated Apache Derby database. For production environment you should consider using MySQL, PostgreSQL, IBM DB2, MSSQL or Oracle

**Choose DB type** MySQL

**Specify DB host** localhost

**Specify DB port** 3306

**Specify the name of the database** open313


**Specify DB user** hola

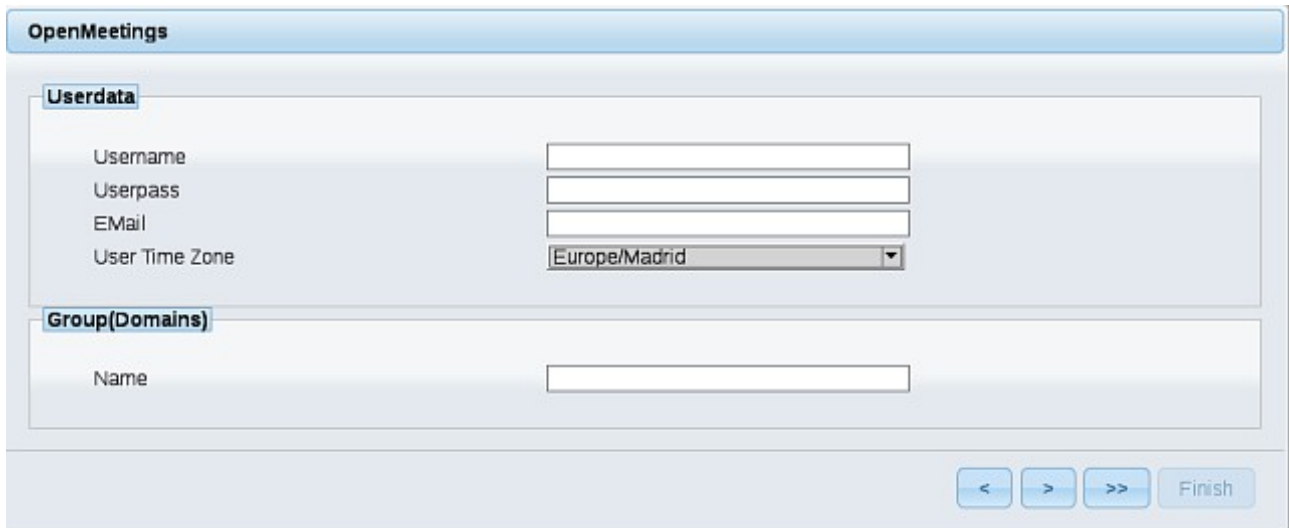
**Specify DB password** 123456

Check

< > >> Finish

...will show the database configuration we made in step 10, or with your own modifications.

Please, push  button, and will go to:



The screenshot shows the 'OpenMeetings' installation window. It has a title bar 'OpenMeetings' and a 'Userdata' section with the following fields:

- Username:
- Userpass:
- E-Mail:
- User Time Zone:

Below the 'Userdata' section is the 'Group(Domains)' section with a 'Name' field:

At the bottom right, there are four buttons: '<', '>', '>>', and 'Finish'.

Now we must introduce the followings data, in order can continue:

**Username** = a-name ...this user will be administrator.

**Userpass** = a-password ...for the previous user.

**Email** = email-adress ...of the previous user.

**User Time Zone** = country where is this server

**Name** = example-openmeetings ...group name to choose.

When the installation be finished, we'll configure the rest.

Now go to bottom, and push the button  (double arrow). Will show this window:

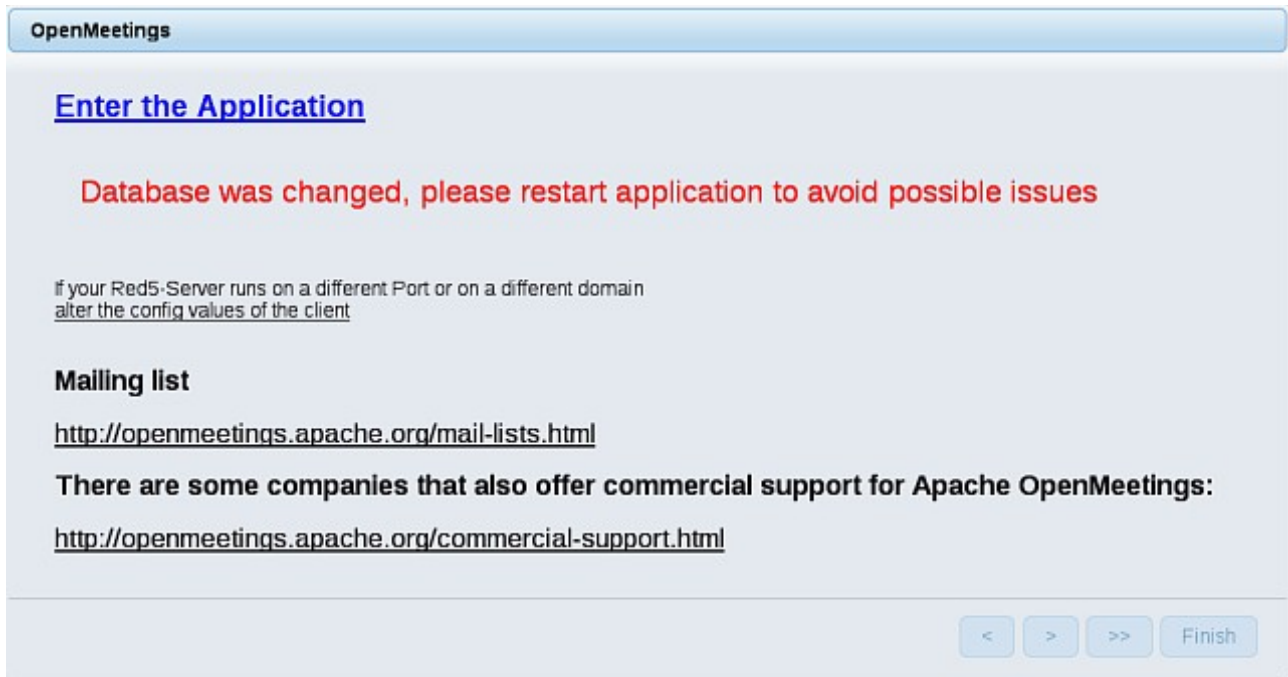


The screenshot shows the 'OpenMeetings' installation window. It has a title bar 'OpenMeetings' and a message: 'Please click "Finish" button to start installation!'. Below the message is a large empty text box:

At the bottom right, there are four buttons: '<', '>', '>>', and 'Finish'.

Push **Finish** button...wait a seconds untill the tables are fill in the database.  
When has concluded, this another page will appear. **Don't** clic on [Enter the Application](#).  
First is need it to restart the server. Please, open a new terminal and restart red5:

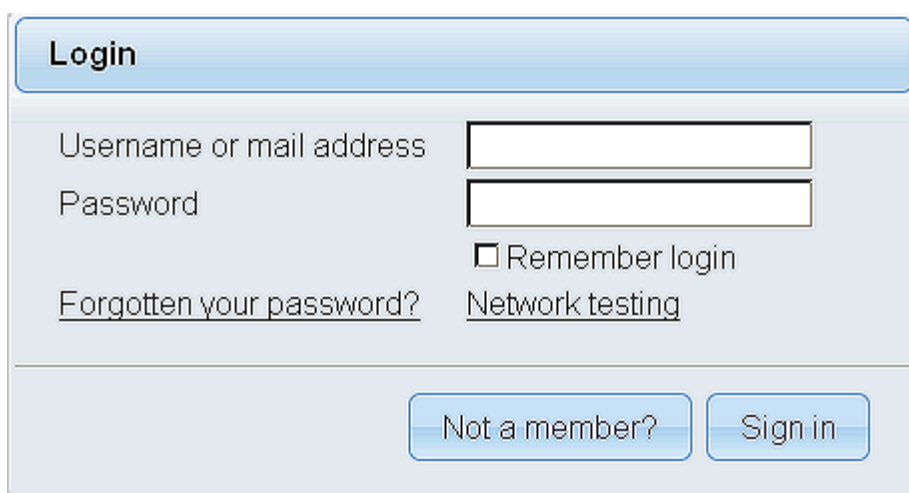
`/etc/init.d/red5-3 restart`



Now yes, you can clic on [Enter the Application](#), or go with your browser to:

<http://localhost:5080/openmeetings>

...and will take us to the entry of OpenMeetings:



Introduce the user's name and the password that you have chosen during the installation, push **Sign in** button and...

**...Congratulations!**

The next time that you like to accede OpenMeetings, would be:

<http://localhost:5080/openmeetings>

Remember to open in the server, the two following ports:

**1935 5080**

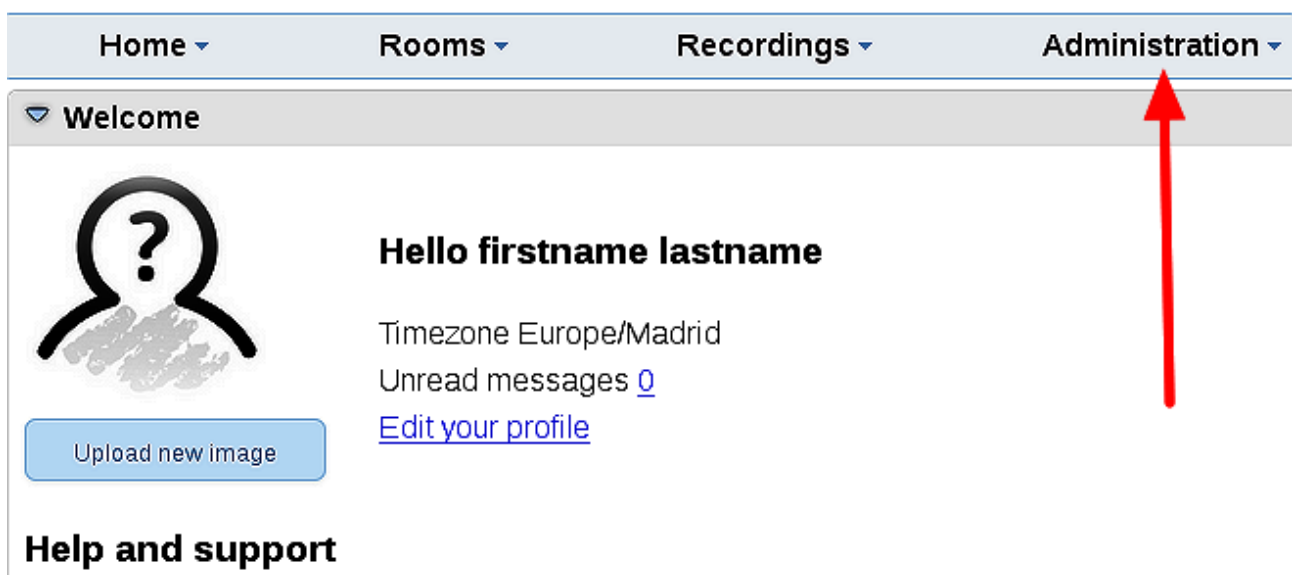
...in order that it could accede to OpenMeetings from other machines from Lan or Internet.

13)

**----- OpenMeetings's configuration -----**

Once you acced to OpenMeetings, we go to:

**Administration → Configuration**



...introduce the parameters for the conversion of files, the audio and the video:

The screenshot shows a configuration management interface with a table of keys and a detailed view of the 'swftools\_path' key. The table has columns for ID, Key, and Value. The detailed view shows the key name, a value field, last update date, updated by, and comment.

ID	Key	Value
5	default_group_id	1
6	smtp_server	localhost
7	smtp_port	25
8	system_email_addr	
9	email_username	
10	email_userpass	123456
11	mail.smtp.starttls.enable	0
12	mail.smtp.connection.timeout	30000
13	mail.smtp.timeout	30000
14	application.name	OpenMeetings
15	default_lang_id	1
16	swftools_zoom	100
17	swftools_jpegquality	85
18	swftools_path	
19	imagemagick_path	
20	sox_path	
21	ffmpeg_path	
22	office.path	
23	jod.path	

The detailed view for 'swftools\_path' shows:

- Key: swftools\_path
- Value: [Empty text box]
- Last update: 26.02.2016 08:48:28
- Updated by: ID:0
- Comment: Path To SWF-Tools

Red arrows indicate: 1 points to the 'swftools\_path' key in the table; 2 points to the 'Value' field in the detailed view; 3 points to the save button (a green plus sign) in the top right of the configuration window.

Clic on: **swftools\_path**...and to the right in **Value** type: [/usr/bin](#)

Clic on: **imagemagick\_path**...and to the right in **Value** type: [/usr/bin](#)

Clic on: **sox\_path**...and to the right in **Value** type: [/usr/bin](#)

Clic on: **ffmpeg\_path**...and to the right in **Value** type: [/usr/local/bin](#)

Clic on: **office.path**...and to the right in **Value** type: [/usr/lib64/libreoffice](#)

Clic on: **jod.path**...and to the right in **Value** type: [/opt/jodconverter-core-3.0-beta-4/lib](#)

Remember save after each change (**arrow number 3**, in the up screenshot).

Now there is OpenMeetings ready to work rightly.

We are going to remove files that already do not serve us, if you do not prefer to save them:

```
rm -f /opt/jodconverter-core-3.0-beta-4-dist.zip
```

```
rm -f /opt/mysql-connector-java-5.1.39.jar
```



And this is all.

-----

If you have some doubt or question, please raise it in the Apache OpenMeetings forums:

<http://openmeetings.apache.org/mail-lists.html>

Thank you.

Alvaro Bustos