



## Installation of Apache OpenMeetings 3.1.1 on Centos 6.8

This tutorial is made based on fresh installations of

**CentOS-6.8-x86\_64-LiveCD.iso**

It is tested with positive result. We will use the Apache's binary version OpenMeetings 3.1.1 stable, that is to say will suppress his compilation. It is done step by step.

28-6-2016

Starting...

1)

```
yum install -y gedit wget
```

At first place we must modify Selinux level security for the installation:

```
sudo gedit /etc/selinux/config
```

...modify:

```
SELINUX=enforcing
```

...to

SELINUX=**permissive**

2)

----- **Update the System** -----

Update operative system:

`yum update -y`

...and reboot for the kernel changes and the new **Selinux** configuration take effect.:

`reboot`

3)

----- **ADD Repos** -----

### Add the **Epel** repository ###

**For Centos 6.x 32 bit**

`cd /opt`

`wget http://dl.fedoraproject.org/pub/epel/6/i386/epel-release-6-8.noarch.rpm`

`rpm -Uvh epel-release-6-8.noarch.rpm`

**For CentOS 6.x 64 bits:**

`cd /opt`

`wget http://dl.fedoraproject.org/pub/epel/6/x86_64/epel-release-6-8.noarch.rpm`

`rpm -Uvh epel-release-6-8.noarch.rpm`

### Añadimos el repositorio **linuxtech** (32 y 64 bits) ###

...para la instalación de vlc, reproductor de video para las futuras grabaciones que hagamos en OpenMeetings.:

`cd /opt`

`wget http://pkgrepo.linuxtech.net/el6/release/linuxtech.repo`

```
cp linuxtech.repo /etc/yum.repos.d
```

```
### Adobe repo 32 bit ## For Flash Player.
```

```
rpm -ivh http://linuxdownload.adobe.com/adobe-release/adobe-release-i386-1.0-1.noarch.rpm
```

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

```
### Adobe repo 64-bit ### For Flash Player.
```

```
rpm -ivh http://linuxdownload.adobe.com/adobe-release/adobe-release-x86\_64-1.0-1.noarch.rpm
```

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

```
yum update
```

4)

#### ----- Installation of Java -----

Java is necessary to work Red5-OpenMeetings. Should install Open Java 1.8 and the plugin icedtea-web:

```
sudo yum install java-1.8.0-openjdk icedtea-web
```

Maybe are installed various versions of Java. Please select the 1.8 version:

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

And to see if the selected version is active: `java -version`

5)

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

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

Should install it:

```
yum -y install libreoffice
```

6)

#### ----- Installation of necessary packages and libraries -----

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

(Only one line with space between 1<sup>a</sup> and 2<sup>a</sup>)

```
yum install -y libjpeg libjpeg-devel ghostscript freetype freetype-devel unzip gcc gcc-c++ ncurses ncurses-devel make zlib zlib-devel libtool bison bison-devel openssl-devel bzip2 bzip2-devel file-roller git autoconf automake pkgconfig tomcat-native nmap
```

7)

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

**ImageMagick** will work with images files. Should install it and some more libraries:

```
yum install -y ImageMagick giflib giflib-devel giflib-utils
```

**Sox** work the sound. Will compile and install it:

```
cd /opt
```

```
wget http://sourceforge.net/projects/sox/files/sox/14.4.2/sox-14.4.2.tar.gz
```

```
tar xzvf sox-14.4.2.tar.gz
```

```
cd /opt/sox-14.4.2
```

```
./configure
```

```
make && make install
```

**Swftools**\_work converting to swf (flash file) the uploaded files. Don't use a newer version; swftools file. Don't have pdf2swf.

```
cd /opt
```

```
wget http://www.swftools.org/swftools-2013-04-09-1007.tar.gz
```

```
tar xzvf swftools-2013-04-09-1007.tar.gz
```

```
cd /opt/swftools-2013-04-09-1007
```

```
./configure --libdir=/usr/lib --bindir=/usr/bin
```

```
make
```

```
make install
```

cd /opt

8)

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

OpenMeetings even need Adobe Flash Player for rooms.

yum install -y flash-plugin

9)

----- **Installation of Jodconverter** -----

Jodconverter work to convert uploaded files.

cd /opt

wget <http://jodconverter.googlecode.com/files/jodconverter-core-3.0-beta-4-dist.zip>

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

10)

----- **Compilation of FFmpeg** -----

FFmpeg will work with video. Will install a libraries and vlc to play the recordings.

yum install -y glibc alsa-lib-devel faac faac-devel faad2 faad2-devel gsm gsm-devel imlib2 **imlib2-devel** lame-devel vorbis-tools theora-tools libvpx-devel vlc cmake mercurial nasm

This ffmpeg compilation is based on this url, and the file versions are updated 29-6-2016:

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

As it is, the compilation in this url gives an error when compiling x264 (second step).

After resolve that error and finish the compilation, gives an error about ogg when recording on OpenMeetings.

Then i supress one step in the url and add some ones more. And now works properly without error, and audio-video is synchronized. Ogg and MP4, right.

Also i made a script to download, compile and install ffmpeg on Centos.

It is tested and is Ok.

During the x265 compilation, will look like stop for a minutes in a text that say: **41%**

Don't worry, everything is going right. Be patience. Will spend about 30 minutes the complete compilation. When it is finished, will appear a text:

## FFMPEG Compilation and Installation Finished!

So, we download the script:

```
cd /opt
```

(Only one line without space between both)

```
wget https://cwiki.apache.org/confluence/download/attachments/27838216/ffmpeg-centos2.sh?version=1&modificationDate=1467205427986&api=v2
```

...rename the script:

```
mv ffmpeg-centos2.sh?version=1 ffmpeg-centos2.sh
```

...concede execution permission to it:

```
chmod +x ffmpeg-centos2.sh
```

...and run it (be connected to Internet):

```
./ffmpeg-centos2.sh
```

When the compilation is finished, you can go to **step 11)**

But if you prefer copy and paste, i **advise not to do it**, i leave the commands script:

```
sudo gedit /opt/ffmpeg-centos2.sh
```

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

```
# Script ffmpeg Centos 6x and 7
# Alvaro Bustos. Thanks to Hunter
# Updated 18-3-2016
# Install libraries
yum install -y autoconf automake cmake freetype-devel gcc gcc-c++ git libtool make mercurial
nasm pkgconfig zlib-devel

# Install yasm from repos
yum 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
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$HOME/ffmpeg_build/lib" CPPFLAGS="-I$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-libbmp3lame
--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 and Installation Finished!"
```

...to here.

Concede permission of execution:

```
chmod +x /opt/ffmpeg-centos2.sh
```

```
cd /opt
```

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

```
./ffmpeg-centos.sh
```

Remember the warning about 8 minutes in a false stop...

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

11)

----- **Installation MariaDB database server** -----

We build a file-repository to download MariaDB data server.

**For Centos 6.x 32 bits:**

```
sudo gedit /etc/yum.repos.d/MariaDB.repo
```



...and copy and paste in:

```
[mariadb]
name = MariaDB
baseurl = http://yum.mariadb.org/10.0/centos6-x86
gpgkey=https://yum.mariadb.org/RPM-GPG-KEY-MariaDB
gpgcheck=1
```

**For Centos 6.x 64 bits:**

```
sudo gedit /etc/yum.repos.d/MariaDB.repo
```

...and copy and paste in:

```
[mariadb]
name = MariaDB
baseurl = http://yum.mariadb.org/10.0/centos6-amd64
gpgkey=https://yum.mariadb.org/RPM-GPG-KEY-MariaDB
gpgcheck=1
```

We install it:

```
yum -y install MariaDB-server MariaDB-client
```

...do a backup of the configuration file; and make a new one:

```
mv /etc/my.cnf /etc/my.bak
```

```
cp /usr/share/mysql/my-medium.cnf /etc/my.cnf
```

...and run the server:

```
service mysql start
```

Give a password to mariadb root . Please, replace **new-password** by your own wish.

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

Make a database for OpenMeetings:

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

...will ask for the root password we does just now:

```
CREATE DATABASE open311 DEFAULT CHARACTER SET 'utf8';
```

...now we do a new user with a password:

```
CREATE USER 'hola'@'localhost' IDENTIFIED BY '123456';
```

...and give privileges to this user on the open311 database:

```
GRANT ALL PRIVILEGES ON open311.* TO 'hola'@'localhost' WITH GRANT OPTION;
```

```
FLUSH PRIVILEGES;
```

```
quit
```

```
open311 ..... name of the database
hola ..... user for that database
123456 ..... password of that user
```

To start, restart or stop mariadb:

```
systemctl start mariadb.service
```

```
systemctl restart mariadb.service
```

```
systemctl stop mariadb.service
```

12)

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

We'll install OpenMeetings in /opt/red5311. All the following information will be based on this directory.

Call to our folder of installation red5311.

Make the folder:

```
mkdir /opt/red5311
```

```
cd /opt/red5311
```

...and download the OpenMeetings file:

```
wget http://ftp.cixug.es/apache/openmeetings/3.1.1/bin/apache-openmeetings-3.1.1.zip
```

```
unzip apache-openmeetings-3.1.1.zip
```

...save the unloaded file to /opt:

```
mv apache-openmeetings-3.1.1.zip /opt
```

Download and install the connector 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/red5311/webapps/openmeetings/WEB-INF/lib
```

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

```
gedit /opt/red5311/webapps/openmeetings/WEB-INF/classes/META-INF/mysql_persistence.xml
```

**Modify on line 72:**

```
, Url=jdbc:mysql://localhost:3306/openmeetings
```

...to

```
, Url=jdbc:mysql://localhost:3306/open311
```

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

**Modify on line 77:**

```
, Username=root
```

...to

```
, Username=hola
```

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

**Modify on line 78:**

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

...to

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

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

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

We protect the access to the file:

(Only one line without space between both)

```
chmod 640 /opt/red5311/webapps/openmeetings/WEB-INF/classes/META-INF/mysql_persistence.xml
```

13)

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

Build a script to start and stop red5-OpenMeetings, that we'll call red5:

```
cd /opt
```

```
sudo gedit /etc/init.d/red5
```

...copy and paste the text **from here**:

```
#
#!/bin/sh -e
#
# Startup script for Red5

export RED5_HOME=/opt/red5311

start_red5="$RED5_HOME/red5.sh start"
stop_red5="$RED5_HOME/red5-shutdown.sh stop"

start() {
    echo -n "Starting Red5: "
    ${start_red5} &
    echo "done."
}
stop() {

echo -n "Shutting down Red5: "
    ${stop_red5}
    echo "done."
}
```

```

case "$1" in
  start)
    start
    ;;
  stop)
    stop
    ;;
  restart)
    stop
    sleep 10
    start
    ;;
  *)
    echo "Usage: $0 {start|stop|restart}"
esac

exit 0

```

...to here. When paste, every line will be together to next lower. So it is right.

If you made the installation in any other path, must modify the line:

```
RED5_HOME=/opt/red5311
```

...to

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

Concede permission of execution to the script:

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

14)

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

Restart mariadb:

```
service mysql restart
```

...and start red5-OpenMeetings, maybe in other window shell:

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

...wait till the text “**ClearSessionTable: 0**” it is the last in the shell. 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/utils/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  button (bottom), and will show the default database configuration with Derby, but we should use 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](#)

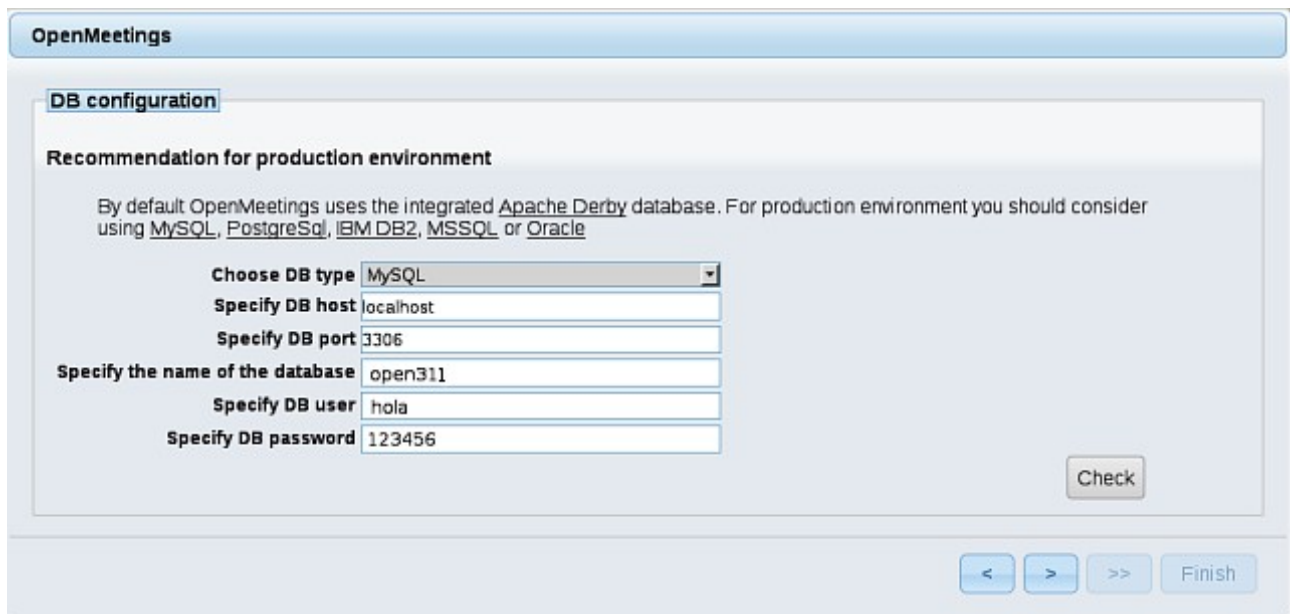
Choose DB type:

Specify the name of the database:

Specify DB user:

Specify DB password:


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

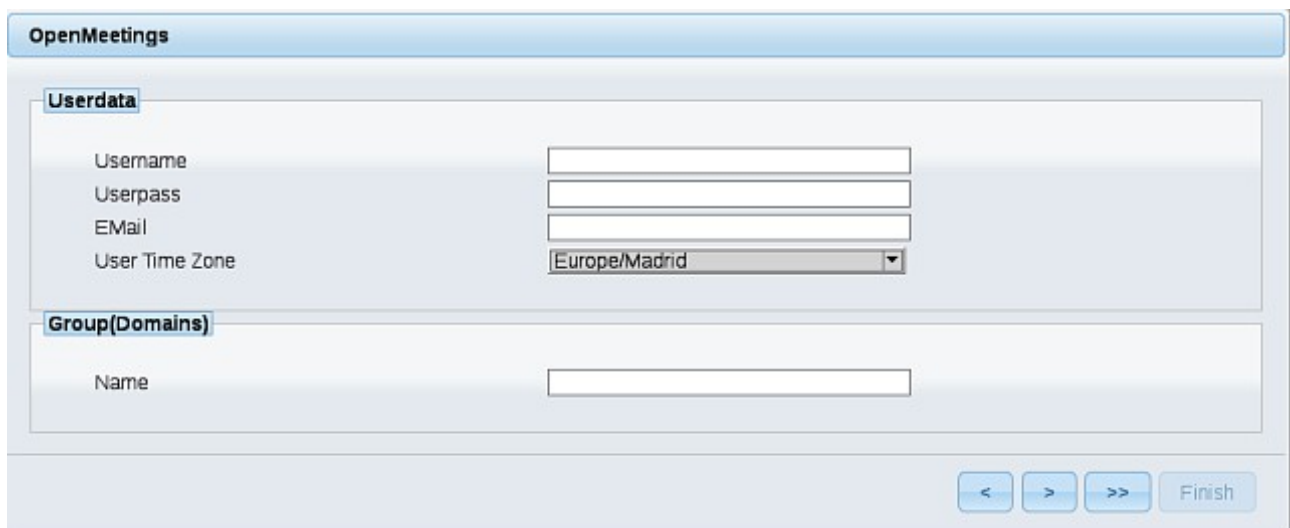


The screenshot shows the 'OpenMeetings' application window with the 'DB configuration' section active. It includes a recommendation for a production environment and several input fields for database settings. The 'Choose DB type' dropdown is set to 'MySQL'. Other fields include 'Specify DB host' (localhost), 'Specify DB port' (3306), 'Specify the name of the database' (open311), 'Specify DB user' (hola), and 'Specify DB password' (123456). A 'Check' button is located at the bottom right of the configuration area. At the very bottom of the window, there are navigation buttons: '<', '>', '>>', and 'Finish'.

|   |           |
|---|-----------|
| <b>Choose DB type</b>                   | MySQL     |
| <b>Specify DB host</b>                  | localhost |
| <b>Specify DB port</b>                  | 3306      |
| <b>Specify the name of the database</b> | open311   |
| <b>Specify DB user</b>                  | hola      |
| <b>Specify DB password</b>              | 123456    |

...will show the data base configuration we made in step 12, or with your own modifications.

Please, push  button, and will go to:



The screenshot shows the 'OpenMeetings' application window with the 'Userdata' section active. It contains input fields for 'Username', 'Userpass', and 'EMail', and a dropdown menu for 'User Time Zone' set to 'Europe/Madrid'. Below this is the 'Group(Domains)' section with a 'Name' input field. At the bottom of the window, there are navigation buttons: '<', '>', '>>', and 'Finish'.

|                |                      |
|----------------|----------------------|
| Username       | <input type="text"/> |
| Userpass       | <input type="text"/> |
| EMail          | <input type="text"/> |
| User Time Zone | Europe/Madrid        |

|                |                      |
|----------------|----------------------|
| Group(Domains) | <input type="text"/> |
|----------------|----------------------|

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

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


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

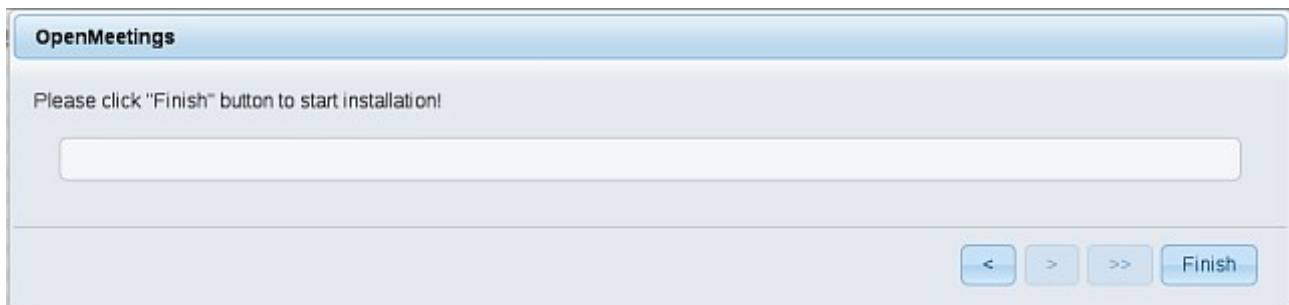
**Email** = email-adress ...of the previous user.

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

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

When the installation be finished, should configure the rest.

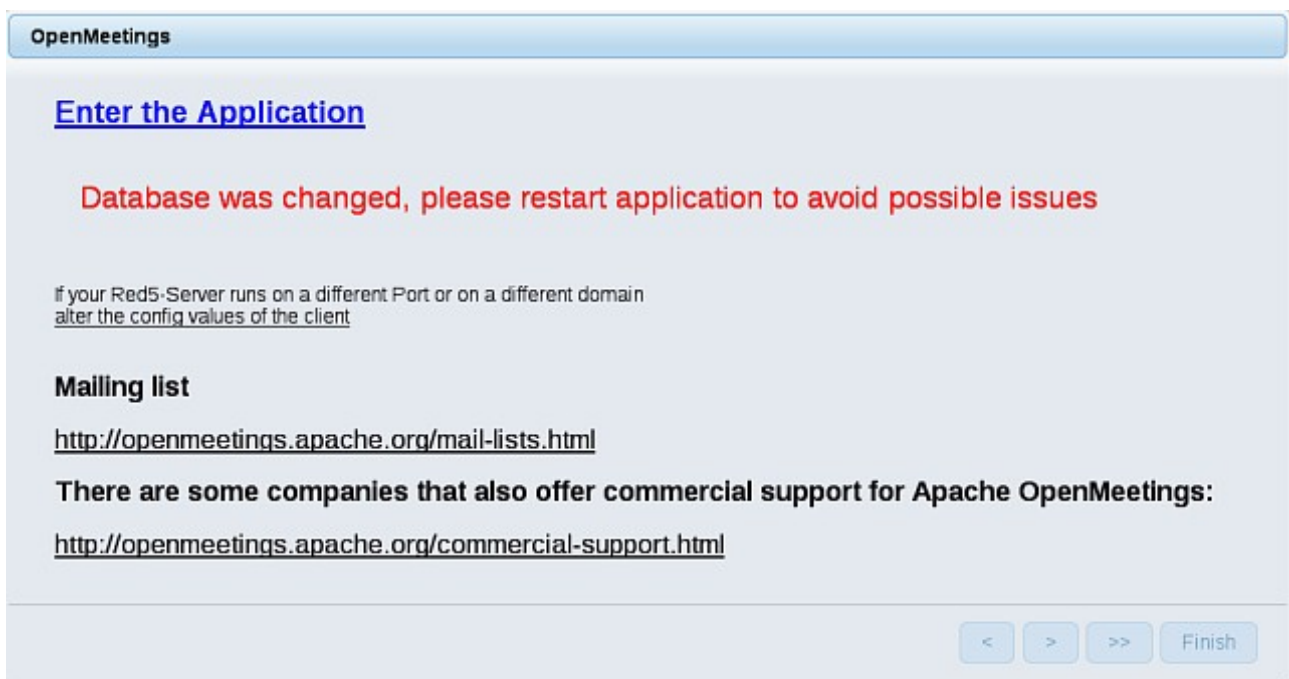
Now push the button  (double arrow). Will show this:



Clic **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 shell window and restart red5:

[/etc/init.d/red5 restart](#)

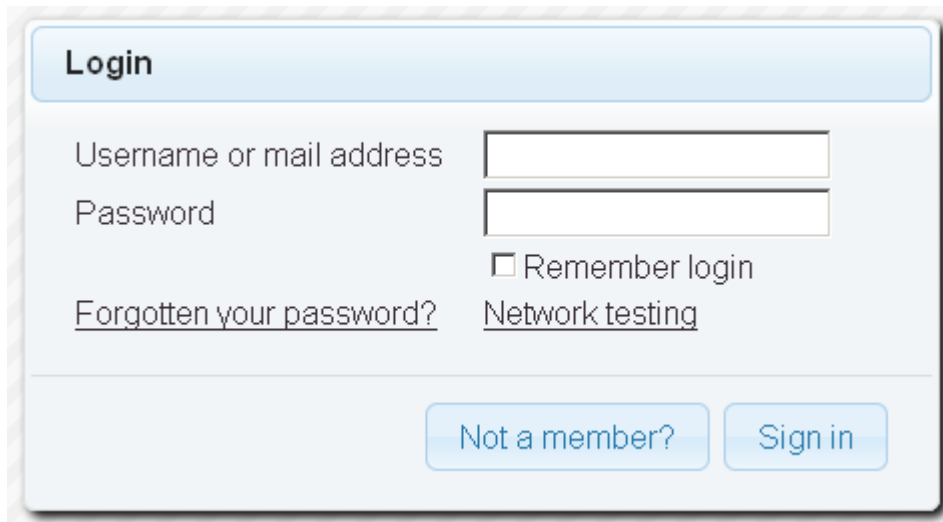




Now yes, you can clic on [Enter the Application](#), or go with your browser to:

<http://localhost:5080/openmeetings>

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



The image shows a login window with a light blue header and a white body. The header contains the word "Login" in bold. Below the header, there are two input fields: "Username or mail address" and "Password". To the right of the "Password" field is a checkbox labeled "Remember login". Below the input fields, there are two links: "Forgotten your password?" and "Network testing". At the bottom of the window, there are two buttons: "Not a member?" and "Sign in".

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, will 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 in Lan or Internet.

15)

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

Once you acced to OpenMeetings, please go to:


## Administration → Configuration



# OpenMeetings

Home ▾ Rooms ▾ Recordings ▾ Administration ▾

Welcome

 **Hello firstname lastname**

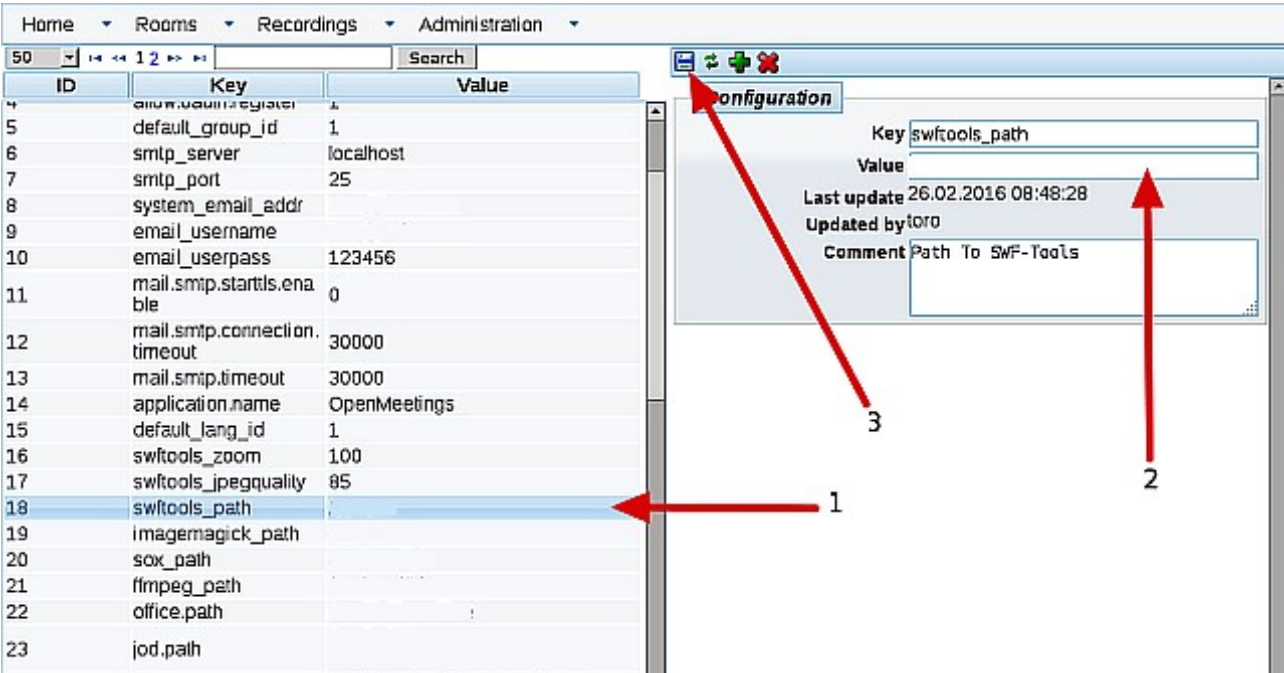
Timezone Europe/Madrid  
Unread messages [0](#)  
[Edit your profile](#)

[Upload new image](#)

## Help and support

[Project website \(http://openmeetings.apache.org\)](http://openmeetings.apache.org)  
[User mailing list \(http://openmeetings.apache.org/mail-lists.html\)](http://openmeetings.apache.org/mail-lists.html)  
[Network testing](#)

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



Home ▾ Rooms ▾ Recordings ▾ Administration ▾

50 ▾ Search

| ID | Key                          | Value        |
|----|------------------------------|--------------|
| 4  | allow_admin_register         | 1            |
| 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                     |              |

**Configuration**

Key

Value

Last update 26.02.2016 08:48:28

Updated by ioro

Comment

1 2 3

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/local/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 (**32 bits**): [/usr/lib/libreoffice](#)

Clic on: **office.path**...and to the right in **Value** type (**64bits**): [/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'll remove files and folders that already do not serve us, if you don't want to save them:

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

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

```
rm -f /opt/sox-14.4.2.tar.gz
```

```
rm -f -R /opt/sox-14.4.2
```

And this is all.

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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