



## Installation of Apache OpenMeetings 3.1.2 on Ubuntu 16.04 LTS

This tutorial is made based on a fresh installations of

**ubuntu-mate-16.04-desktop-amd64.iso**

It is tested with positive result. We will use the Apache's binary version OpenMeetings 3.1.2 stable, that is to say will suppress his compilation. It is done step by step.

Updated 12-8-2016

Starting...

1)

First, we update and upgrade the OS:

```
sudo apt-get update
```

```
sudo apt-get upgrade
```

2)

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

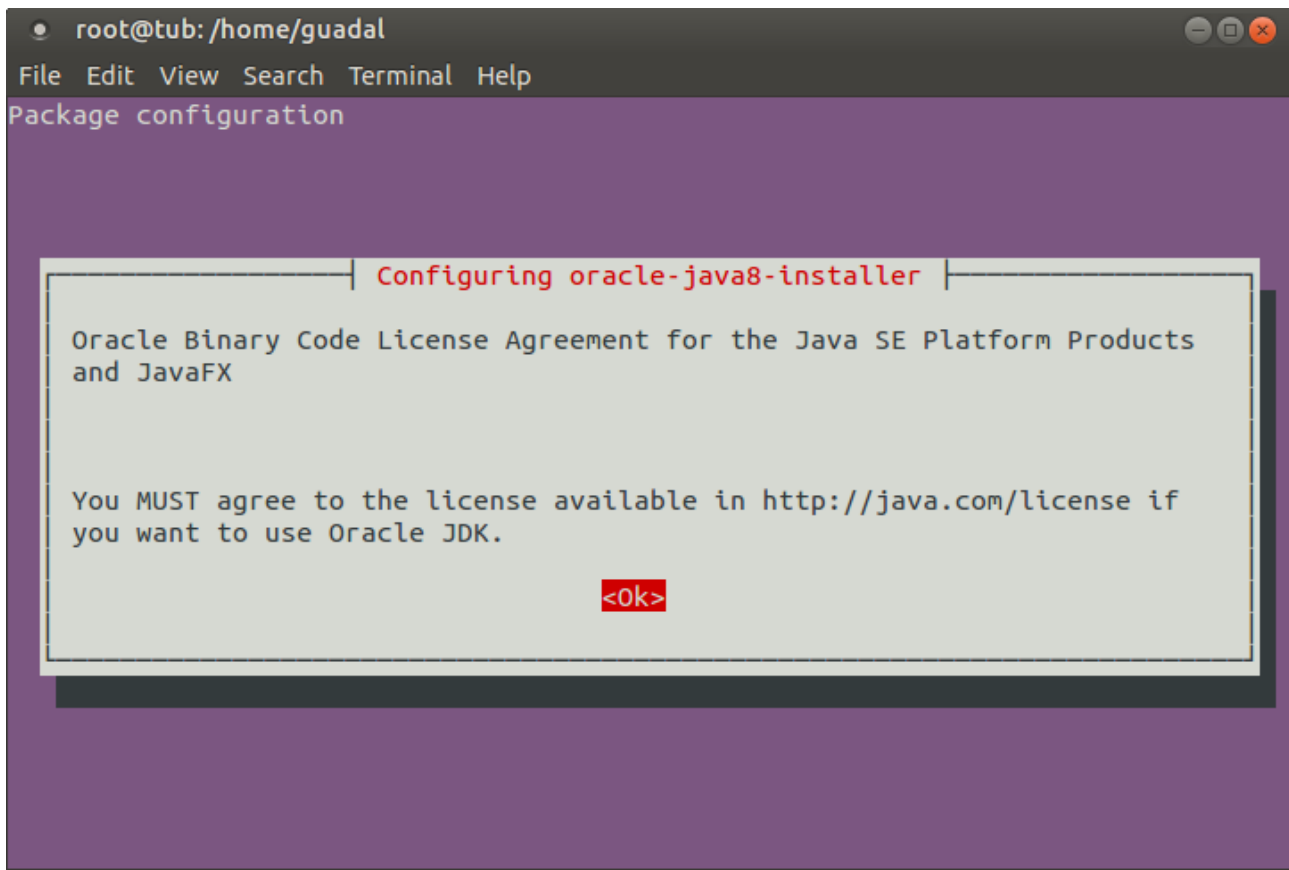
Red5-OpenMeetings need Java to work. We'll install Oracle Java:

```
sudo add-apt-repository ppa:webupd8team/java
```

```
sudo apt-get update
```

```
sudo apt-get install oracle-java8-installer
```

Will open a window. Press **Enter** accepting:



```
root@tub: /home/guadal
File Edit View Search Terminal Help
Package configuration

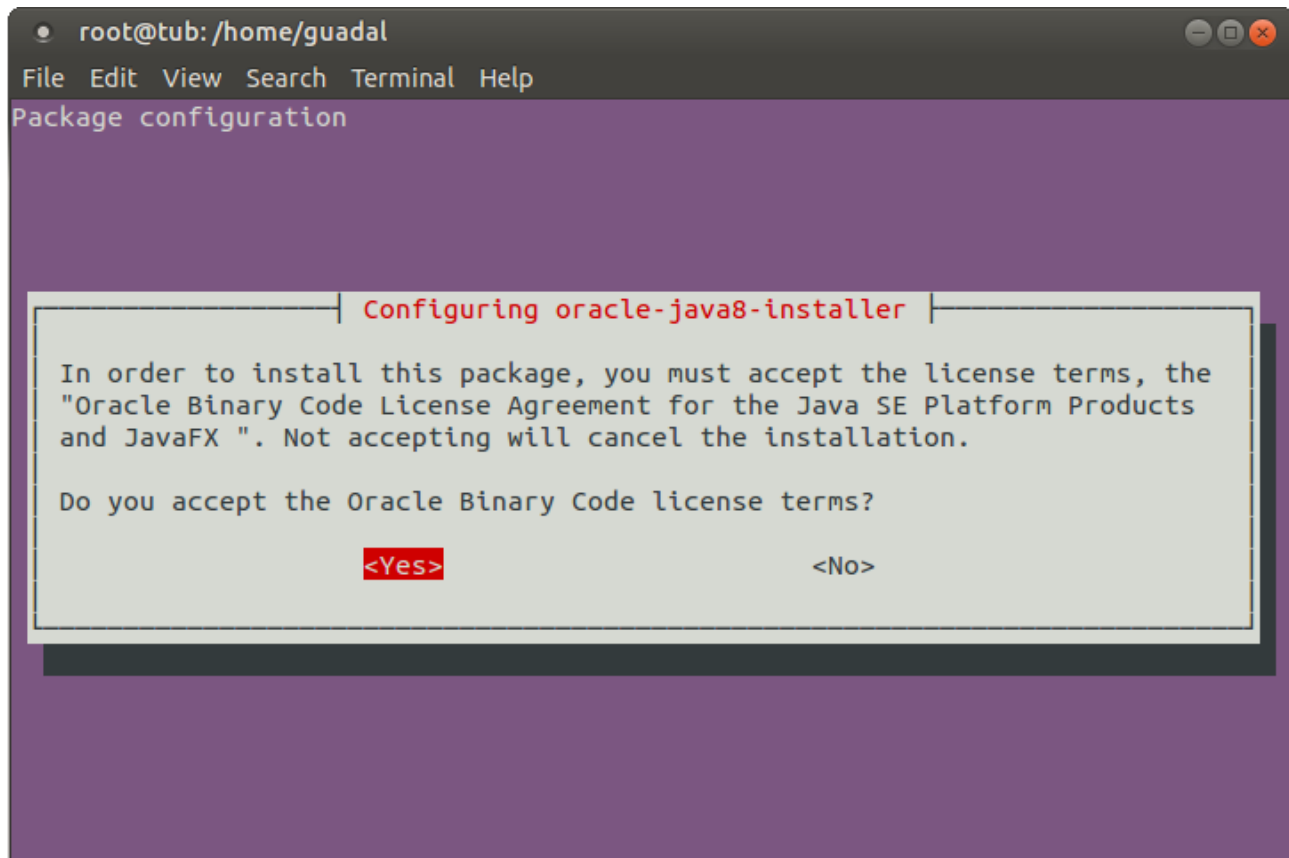
Configuring oracle-java8-installer

Oracle Binary Code License Agreement for the Java SE Platform Products
and JavaFX

You MUST agree to the license available in http://java.com/license if
you want to use Oracle JDK.

<Ok>
```

Will ask newly. Select **Yes** → **Enter**



```
root@tub: /home/guadal
File Edit View Search Terminal Help
Package configuration

Configuring oracle-java8-installer

In order to install this package, you must accept the license terms, the
"Oracle Binary Code License Agreement for the Java SE Platform Products
and JavaFX ". Not accepting will cancel the installation.

Do you accept the Oracle Binary Code license terms?

<Yes> <No>
```

Now, please, select Oracle Java, if you have more than one java versions installed. OpenJava give an error in some function of OpenMeetings. I've tested it:

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

To see the active java version:

```
java -version
```

3)

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

LibreOffice is need it to convert to pdf the uploaded office files.

The ubuntu desktop iso have already LibreOffice installed, but we do also for server iso:

```
sudo add-apt-repository ppa:libreoffice/ppa
```

```
sudo apt-get update
```

```
sudo apt-get install libreoffice
```

Now some kind of information only:

LibreOffice installation folder is /usr/lib/libreoffice.

4)

#### ----- Installation ImageMagic, Sox and Swftools -----

**ImageMagic**, will work the image files, png, jpg, gif, etc. Will install it and some more libraries and paquets:

(Only one line with space between both)

```
sudo apt-get install -y imagemagick gdebi libjpeg62 synaptic zlib1g-dev unzip make build-essential wget nmap
```

**Sox**, work the sound. We'll compile, because this version is newer than the repo:

```
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.** LibreOffice convert the uploaded office files to pdf, and Swftools convert these pdf to swf, flash files, that later will show it in the whiteboard. Also convert jpg2swf, png2swf, gif2swf. Don't use a newer swftools version. Surely, will have not pdf2swf.

```
sudo apt-get install libstreamer-plugins-base0.10-0 libstreamer0.10-0 libgif7 libzip-0-13
```

**For 64 bit:**

```
cd /opt
```

(Only one line without space between both)

```
wget http://mirrors.kernel.org/ubuntu/pool/universe/libo/liboil/liboil0.3_0.3.17-2ubuntu4_amd64.deb
```

```
dpkg -i liboil0.3_0.3.17-2ubuntu4_amd64.deb
```

(Only one line without space between both)

```
wget https://launchpad.net/ella-rennaissance/ella-rennaissance-beta/beta1/+download/swftools_0.9.1-1_amd64.deb
```

```
dpkg -i swftools_0.9.1-1_amd64.deb
```

```
echo "swftools hold" | sudo dpkg --set-selections (To block version)
```

**For 32 bit:**

```
cd /opt
```

```
wget http://mirrors.kernel.org/ubuntu/pool/universe/libo/liboil/liboil0.3_0.3.17-2ubuntu4_i386.deb
```

```
dpkg -i liboil0.3_0.3.17-2ubuntu4_i386.deb
```

(Only one line without space between both)

```
wget https://launchpad.net/ella-rennaissance/ella-rennaissance-beta/beta1/+download/swftools_0.9.1-1_i386.deb
```

```
dpkg -i swftools_0.9.1-1_i386.deb
```

```
echo "swftools hold" | sudo dpkg --set-selections (To block version)
```

5)

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

OpenMeetings even need Adobe Flash Player for rooms. We install it

```
sudo apt-get install flashplugin-installer
```

6)

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

**Jodconverter** work 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
```

7)

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

**FFmpeg** will work with video.

We'll compile it. This compilation is based on:

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

Updated files to 12-8-2016. Install some libraries:

(Only one line with space between each one)

```
sudo apt-get -y --force-yes install autoconf automake build-essential libass-dev libfreetype6-dev libgpac-dev libsd11.2-dev libtheora-dev libtool libva-dev libvdpau-dev libvorbis-dev libxcb1-dev libxcb-shm0-dev libxcb-xfixes0-dev pkg-config texi2html zlib1g-dev nasm libx264-dev cmake mercurial libopus-dev curl git
```

We'll employ a script that it will download, compile and install ffmpeg. It is tested recordings, audio and video synchronized. MP4 and Ogg Ok. Please, download the script:

```
cd /opt
```

(Only one line without space between both)

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

...concede permission of execution:

```
chmod +x ffmpeg-ubuntu-debian.sh
```

...and run it (be connected to Internet). The compilation will spend about 30 minutes:

```
./ffmpeg-ubuntu-debian.sh
```

When finish the compilation, a text will announce it:

FFmpeg Compilation is Finished!

Then, please, go to **step 8**).

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

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

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

```
# FFmpeg compilation for Ubuntu and Debian.
# Alvaro Bustos. Thanks to Hunter.
# Updated 12-8-2016
```

```
sudo apt-get update
sudo apt-get -y --force-yes install autoconf automake build-essential libass-dev libfreetype6-dev
libsdl1.2-dev libtheora-dev libtool libva-dev libvdpau-dev libvorbis-dev libxcb1-dev libxcb-shm0-
dev libxcb-xfixes0-dev pkg-config texi2html zlib1g-dev mercurial cmake
```

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

```
# Download the necessary sources.
wget ftp://ftp.gnome.org/mirror/xbmc.org/build-deps/sources/lame-3.99.5.tar.gz
wget http://www.tortall.net/projects/yasm/releases/yasm-1.3.0.tar.gz
curl -#LO ftp://ftp.videolan.org/pub/x264/snapshots/last_stable_x264.tar.bz2
hg clone https://bitbucket.org/multicoreware/x265
wget -O fdk-aac.tar.gz https://github.com/mstorsjo/fdk-aac/tarball/master
wget http://downloads.xiph.org/releases/opus/opus-1.1.2.tar.gz
wget http://storage.googleapis.com/downloads.webmproject.org/releases/webm/libvpx-1.5.0.tar.bz2
git clone --depth 1 git://source.ffmpeg.org/ffmpeg
```

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

```

cd yasm-*/
./configure --prefix="$HOME/ffmpeg_build" --bindir="$HOME/bin" && make && sudo make
install && make distclean; cd ..

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

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

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

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

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

cd libvpx-*/
PATH="$HOME/bin:$PATH" ./configure --prefix="$HOME/ffmpeg_build" --disable-examples
--disable-unit-tests && PATH="$HOME/bin:$PATH" make && sudo make install && make clean;
cd ..

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

cd ~/bin
cp ffmpeg ffprobe ffplay ffmpegserver vsyasm x264 yasm ytasm /usr/local/bin

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

echo "FFmpeg Compilation is Finished!"

```

**...to here.**

Concede permission of execution:

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

Now be connected to Internet, run the script and wait about 30 minutes while the compilation:

```
cd /opt
```

```
./ffmpeg.sh
```

All the compiled files are installed in: /usr/local/bin

8)

----- Installation and configuration of MariaDB data server -----

**MariaDB** is the data server. Will install it. (Version 10.x):

```
sudo apt-get install mariadb-server
```

Run MariaDB:

```
/etc/init.d/mysql start
```

Now we give a root password to MariaDB. Please, replace **new-password** with 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 you have just chosen, type it...

```
MariaDB [(none)]> CREATE DATABASE open312 DEFAULT CHARACTER SET 'utf8';
```

With this command we has created a database called open312.

Now we create a user with all permission on this database.

(Only one line with space between both)

```
MariaDB [(none)]> GRANT ALL PRIVILEGES ON open312.* TO 'hola'@'localhost'  
IDENTIFIED BY '123456' WITH GRANT OPTION;
```

\* **open312** .....is the database name.

\* **hola** .....is the user name for this database.

\* **123456** .....is the password for this user.



You can change the data...but remember it! Later we'll need it.

Now, we leave MariaDB:

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

9)

----- **Installation of OpenMeetings** -----

We'll install OpenMeetings in /opt/red5312. All the following information will be based on this directory.

Make the folder:

```
mkdir /opt/red5312
```

```
cd /opt/red5312
```

...and download the file:

```
wget http://ftp.cixug.es/apache/openmeetings/3.1.2/bin/apache-openmeetings-3.1.2.zip
```

```
unzip apache-openmeetings-3.1.2.zip
```

...save the unloaded file to /opt:

```
mv apache-openmeetings-3.1.2.zip /opt
```

Do to **nobody** owner of the whole OpenMeetings folder installation, by security:

```
chown -R nobody /opt/red5312
```

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/red5312/webapps/openmeetings/WEB-INF/lib
```

Now we form OpenMeetings for our database in MariaDB:

[gedit /opt/red5312/webapps/openmeetings/WEB-INF/classes/META-INF/mysql\\_persistence.xml](#)

**Modify line 71:**

, Url=jdbc:mysql://localhost:3306/openmeetings\_3\_1?

...to

, Url=jdbc:mysql://localhost:3306/open312?

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

**Modify line 76:**

, Username=root

...to

, Username=hola

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

**Modify 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, replace it here.

We protect the access to the file:

(Only one line without space between both)

[chmod 640 /opt/red5312/webapps/openmeetings/WEB-INF/classes/META-INF/mysql\\_persistence.xml](#)

10)

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

Please, download the red5 run script:

```
cd /opt
```

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

...and copy it to:

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

Concede permission of execution:

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

11)

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

Start MariaDB, if still it is not:

```
/etc/init.d/mysql start
```

...and now start red5-OpenMeetings. Please, be connected to Internet:

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

...will appear two text lines in the shell:

```
start-stop-daemon: --start needs --exec or --startas  
Try 'start-stop-daemon --help' for more information.
```

...you do nothing. Don't worry, everything work right,

...wait 40 seconds at least, in order that red5 it is runing completely. And after this, can go to:

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

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

## OpenMeetings

## 1. Enabling Image Upload and import to whiteboard

- 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

- 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).
- 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

- **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


- 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!
- 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 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

Specify the name of the database

Specify DB user

Specify DB password

...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** open312


**Specify DB user** hola

**Specify DB password** 123456

Check

< > >> Finish

...will show the database configuration we made in step 9, or with your own modifications.

Please, push  button, and will go to:

**OpenMeetings**

**Userdata**

Username

Userpass

EMail

User Time Zone Europe/Madrid

**Group(Domains)**

Name

< > >> Finish

Here we must introduce the followings data:

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


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

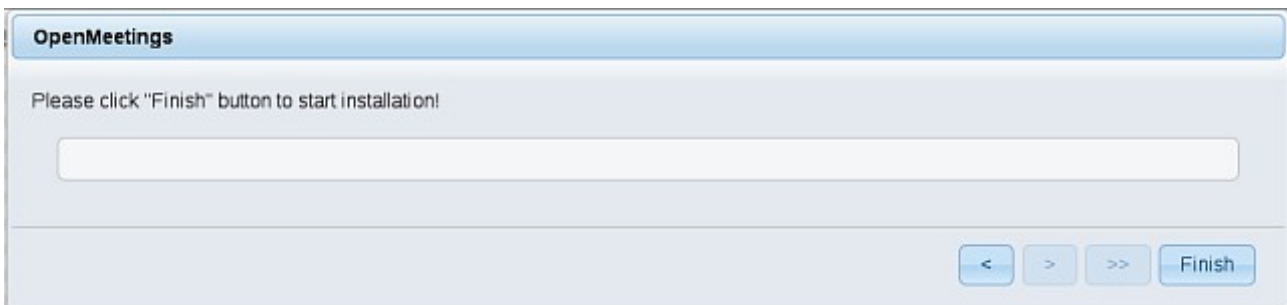
**Email** = email-adress ...of the previous user.

**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.

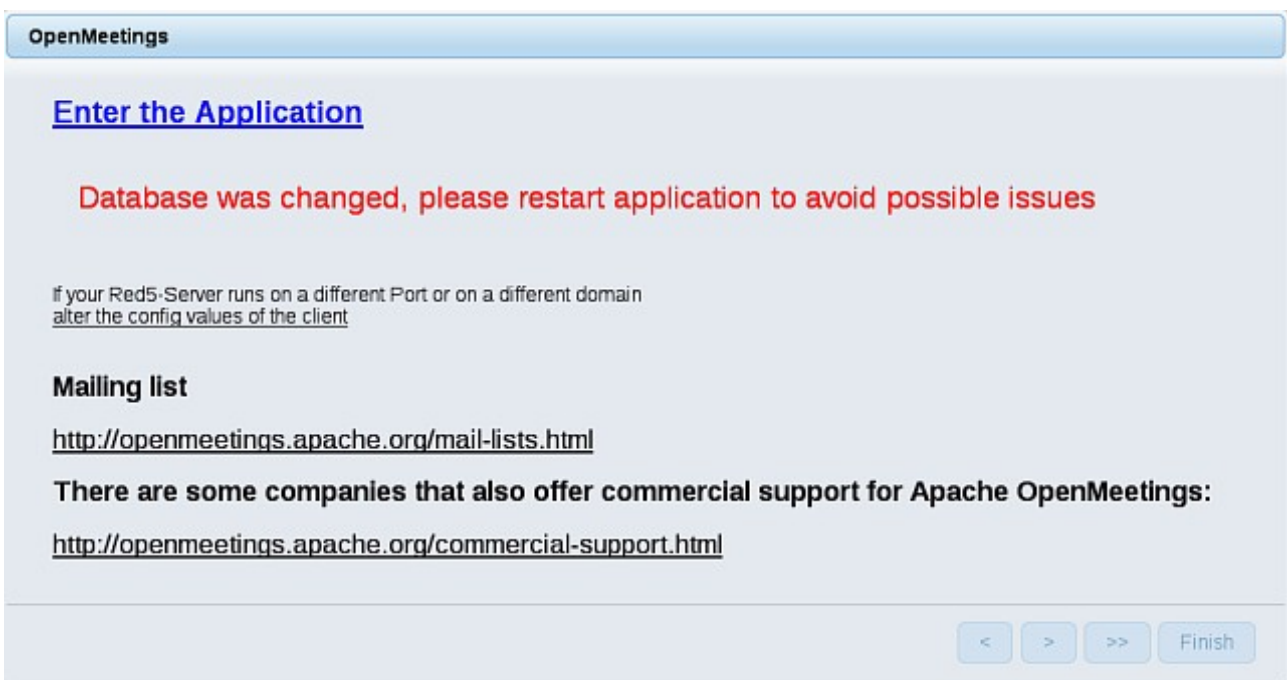
Now go to bottom page and push the button  (double arrow). Will show this window:



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, be connected to Internet:

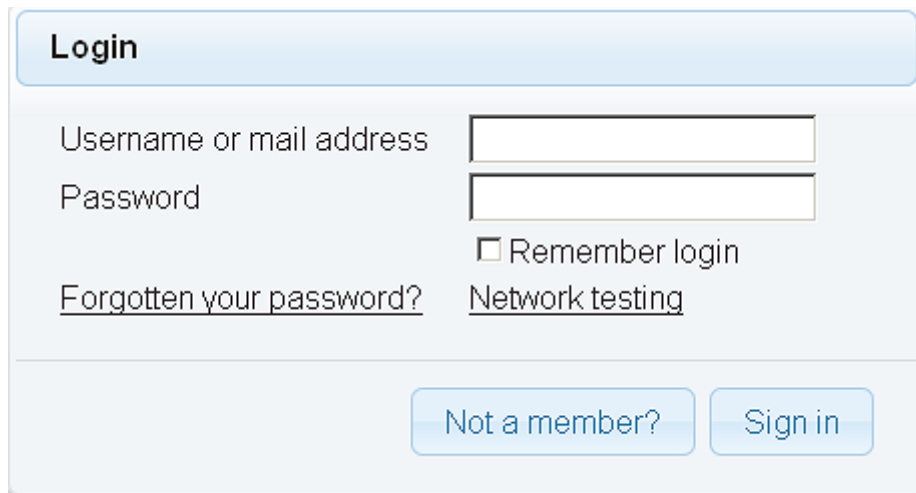
[/etc/init.d/red5-ubdeb restart](#)



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 accede to 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 in LAN or Internet.

12)

**----- OpenMeetings's Configuration -----**


Once you acced to OpenMeetings, go to:

**Administration → Configuration**



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_vault_registration	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_pegquality	85
18	swftools_path	
19	imagemagick_path	
20	sox_path	
21	ffmpeg_path	
22	office.path	
23	jod.path	http://small-networks.apache.org

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

Clic on: **office.path**...and to the right in **Value** type (64 bit): [/usr/lib/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 and folders that already do not serve us, if you do not 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.

-----

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