



## **Installation of Apache OpenMeetings 3.1.2 on Centos 7**

This tutorial is made based on fresh installations of

**CentOS-7-x86\_64-LiveGNOME-1503.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

Please, be connected to Internet in all the process to run any server.

Starting...

**1)**

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

```
yum install -y nano
```

```
sudo nano /etc/selinux/config
```

...modify:

```
SELINUX=enforcing
```

...to

```
SELINUX=permissive
```

2)

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

Update operative system:

`yum update -y`

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

`reboot`

3)

----- ADD Repos -----

`yum install -y wget`

**## EPEL & Remi: ##**

`wget http://epel.mirror.nucleus.be/7/x86\_64/e/epel-release-7-7.noarch.rpm`

`wget http://rpms.famillecollet.com/enterprise/remi-release-7.rpm`

`sudo rpm -Uvh remi-release-7*.rpm epel-release-7*.rpm`

Enable Remi:

`nano /etc/yum.repos.d/remi.repo`

...and modify (the first enabled):

`enabled=0`

`...to`

`enabled=1`

**## ElRepo ##**

`rpm --import https://www.elrepo.org/RPM-GPG-KEY-elrepo.org`

`rpm -Uvh http://www.elrepo.org/elrepo-release-7.0-2.el7.elrepo.noarch.rpm`

**## Nux ##**

(Only one line without space)

`rpm -Uvh http://li.nux.ro/download/nux/dextop/el7/x86\_64/nux-dextop-release-0-5.el7.nux.noarch.rpm`

```
## Adobe repo 64-bit x86_64 ## 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 -y
```

4)

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

Java it is necessary to work red5-OpenMeetings. We install Oracle Java. 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:

```
rpm -ivh jdk-8u101-linux-x64.rpm
```

Maybe you have installed various 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
```

5)

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

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

Maybe it is installed, but for iso server:

```
yum -y install libreoffice libreoffice-headless
```

6)

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

Will install packages and libraries we'll need later:

(Only one line with space)

```
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 vlc
```

7)

## ----- Installation ImageMagick, Sox and Swftools -----

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

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

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

(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

10)

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

FFmpeg 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 autoconf automake cmake freetype-devel gcc gcc-c++ git libtool make mercurial nasm pkgconfig zlib-devel curl

This ffmpeg compilation is based on this url, updated file versions 12-8-2016:

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

Download a script to compile and install ffmpeg on Centos 7. It is tested and is ok. During the x265 compilation, will look like stop for a minutes in a text that say: **41%**,

but not always. Don't worry, everything is going right. Be patience.

When is finished, will appear a text:

**FFMPEG Compilation is 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
```

...concede execution permission to it:

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

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

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

When finish, please, go to **step 11**).

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

```
sudo nano /opt/ffmpeg-centos.sh
```

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

```
# Script ffmpeg compile for Centos 6.x and Centos 7.x
# Alvaro Bustos. Thanks to Hunter
# Updated 12-8-2016
# 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.
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$HOME/ffmpeg_build/lib" CPPFLAGS="-I$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-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/ffpmeg-centos.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 data server -----

MariaDB is the database server.

We install it:



```
yum install -y mariadb-server
```

...and run mariadb:

```
systemctl start mariadb.service
```

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

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

Make a database for OpenMeetings:

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

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

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

Now we create a user with all permission on this open312 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 ..... name of the database
* hola ..... user for that database
* 123456 .....password of that user
```

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

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

12)

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

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

Call to our folder of installation red5312

Make the folder:

```
mkdir /opt/red5312
```

```
cd /opt/red5312
```

...and download the OpenMeetings 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
```

Unload and install the connector between OpenMeetings and MariaDB:

```
cd /opt
```

```
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 are going to configure OpenMeetings for our database in MariaDB:

```
nano /opt/red5312/webapps/openmeetings/WEB-INF/classes/META-INF/mysql_persistence.xml
```

**Modify in 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 in line 76:**

```
, Username=root
```

...to

```
, Username=hola
```

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

**Modify in 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.

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
```

**13)**

**----- 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-cf
```

...copy it to where must be:

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

...concede execution permission:

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

If you made the installation in any other different path to /opt/red5312, please edit the script and modify the line:

RED5\_HOME=/opt/red5312

...to

RED5\_HOME=/your-path-installation

14)

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

Restart mariadb:

```
systemctl restart mariadb.service
```

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

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

...wait about 40 seconds, to run completely. 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**
  - 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!

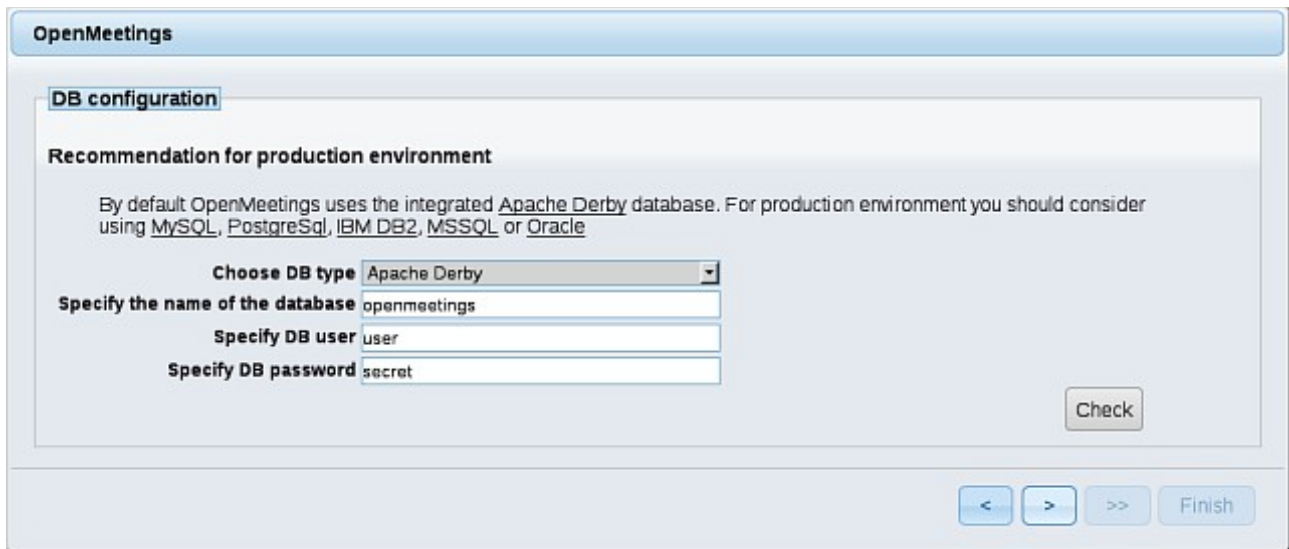
**If you have further questions or need support in installation or hosting:**

**Community-Support:**

[Mailing lists](#)

**Commercial-Support:**

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

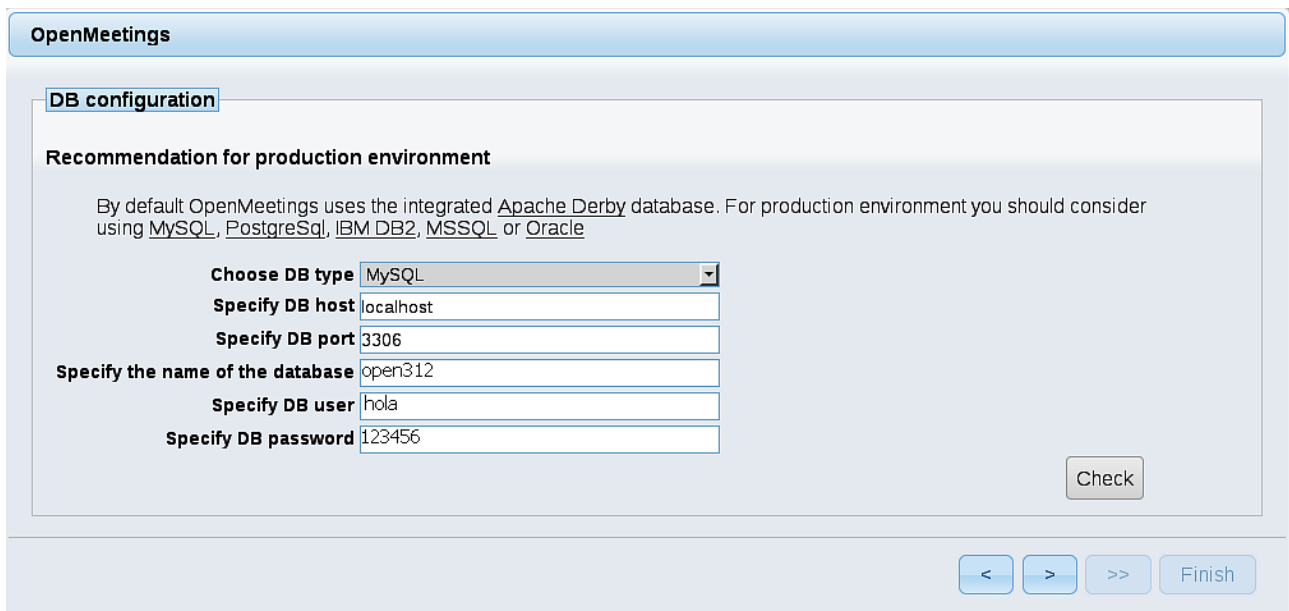


The screenshot shows the 'OpenMeetings' window with the 'DB configuration' section. It includes a recommendation for a production environment and a form with the following fields:

Choose DB type	Apache Derby
Specify the name of the database	openmeetings
Specify DB user	user
Specify DB password	secret

Buttons: < > >> Check Finish

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




The screenshot shows the 'OpenMeetings' window with the 'DB configuration' section. It includes a recommendation for a production environment and a form with the following fields:

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

Buttons: < > >> Check Finish

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

Please, push  button and will go to:

Now we must introduce the followings data:

**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 page and touch the button  (double arrow). Will show this window:

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 red5 server. Be connectd to Internet:

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

**OpenMeetings**

[Enter the Application](#)

**Database was changed, please restart application to avoid possible issues**

if your Red5-Server runs on a different Port or on a different domain  
alter the config values of the client

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

**There are some companies that also offer commercial support for Apache OpenMeetings:**  
<http://openmeetings.apache.org/commercial-support.html>

< > >> Finish

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:

**Login**

Username or mail address

Password

Remember login

[Forgotten your password?](#) [Network testing](#)

Not a member? 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**

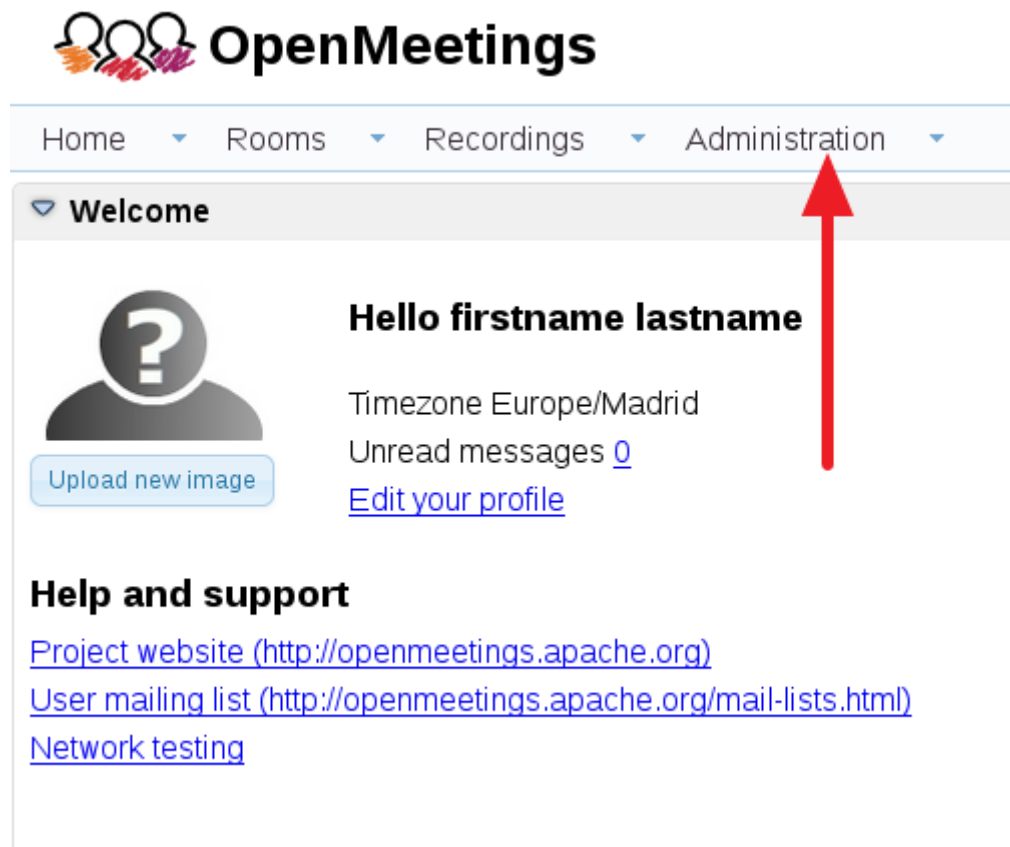
...in order that it could accede to OpenMeetings from other machines in Lan or Internet.

15)

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

Once you acced to OpenMeetings, go to:

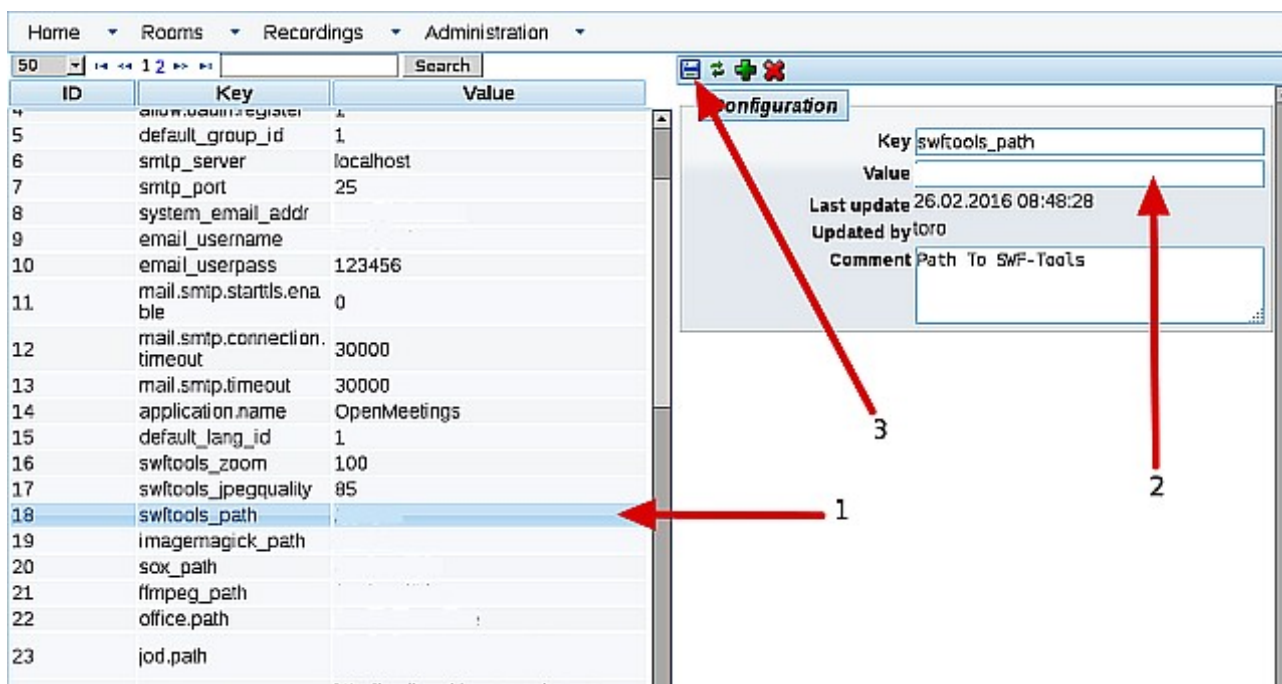
**Administration → Configuration**



The screenshot shows the OpenMeetings web application interface. At the top, there is a navigation bar with the following items: Home, Rooms, Recordings, and Administration. The Administration item is highlighted with a red arrow pointing upwards. Below the navigation bar, there is a 'Welcome' section with a user profile card. The profile card includes a placeholder image with a question mark, the text 'Hello firstname lastname', the timezone 'Europe/Madrid', and 'Unread messages 0'. There are two buttons: 'Upload new image' and 'Edit your profile'. Below the profile card, there is a 'Help and support' section with three links: 'Project website (http://openmeetings.apache.org)', 'User mailing list (http://openmeetings.apache.org/mail-lists.html)', and 'Network testing'.



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



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: [/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 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