



## Installation of Apache OpenMeetings 3.1.x on Ubuntu 16.04 LTS

This tutorial is made based on fresh installations of

**ubuntu-mate-16.04-beta2-desktop-amd64.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.

1-4-2016

Starting...

1)

First update and upgrade the OS:

```
sudo apt-get update
```

```
sudo apt-get upgrade
```

2)

### ---- Installation of OpenJava 1.8 ----

Red5-OM need Java to work. We'll install OpenJava 1.8.

```
sudo apt-get install openjdk-8-jre-headless
```

Also we'll install a web plugin, to run screenshare from Conference Room:

```
sudo apt-get install icedtea-8-plugin
```

If you have more than one java version installed, you can choose one:

```
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 files.

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

```
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. Will install it and some more libraries.

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

**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. Don't have 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)

```
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)

```
wget https://launchpad.net/ella-renaissance/ella-renaissance-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
```

```
wget http://www.tataranovich.com/debian/pool/squeeze/main/s/swftools/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.

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

6)

---- 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
```

7)

---- Compilation of FFmpeg ----

**Ffmpeg** will work with video.

This compilation is based on:

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

Install libraries.

(In 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 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 nasm libx264-dev cmake  
mercurial libopus-dev
```

We'll make a script that it should download, compile and install ffmpeg.

It is updated to the last versions files 3-4-2106.

It is tested and works rightly with synchronized audio and video. Mp4 and Ogg ok.

Please, download the script. Inside the zip are the instructions to run it:

[https://cwiki.apache.org/confluence/download/attachments/27838216/ffmpeg\\_script\\_compile\\_Ubuntu\\_Debian.zip?version=7&modificationDate=1459700906471&api=v2](https://cwiki.apache.org/confluence/download/attachments/27838216/ffmpeg_script_compile_Ubuntu_Debian.zip?version=7&modificationDate=1459700906471&api=v2)

...and after running it, you can go to step 8)

But if you prefer copy and paste, i **don't** advise:

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

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

```
# Ffmpeg for Ubuntu, Debian 8 and Debian 7
# Alvaro Bustos. Thanks to Hunter.
# 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
wget http://download.videolan.org/pub/x264/snapshots/x264-snapshot-20160402-2245-
stable.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
wget http://ffmpeg.org/releases/ffmpeg-3.0.1.tar.gz

# 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-snapshot*
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 yasm /usr/local/bin
```

```
cd ~/ffmpeg_build/bin
```

```
cp lame x265 /usr/local/bin
```

```
echo "¡Compilation finished!"
```

**...to here.**

Concede permission of execution:

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

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

```
cd /opt
```

```
./ffmpeg.sh
```

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

8)

---- Installation and configuration of MariaDB database server ----

**MariaDB** is the database 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 we have just chosen, type it...

```
MariaDB [(none)]> CREATE DATABASE open311 DEFAULT CHARACTER SET 'utf8';
```

With this command we has created a called database open311 though you can choose another name to your wish.

Now we create a user with all the permission on this open311 database.

(Only one line with space)

```
MariaDB [(none)]> GRANT ALL PRIVILEGES ON open311.* TO 'hola'@'localhost'  
IDENTIFIED BY '123456' WITH GRANT OPTION;
```

- \* **open311** .....is the database name.
- \* **hola** .....is the user name for the database.
- \* **123456** .....is the password of the user called **hola**.

You can change the data...but remember it!

And go out from MariaDB:

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

9)

---- Installation of OpenMeetings ----

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

Make the folder:

```
mkdir /opt/red5311
```

```
cd /opt/red5311
```

...and download the file:

```
wget http://apache.rediris.es/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
```

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

```
chown -R nobody /opt/red5311
```

Unload and install the connector between OpenMeetings and MariaDB:

```
cd /opt
```

(Only one line without space)

```
wget http://repo1.maven.org/maven2/mysql/mysql-connector-java/5.1.38/mysql-connector-java-5.1.38.jar
```

...and copy it to where must be:

```
cp /opt/mysql-connector-java-5.1.38.jar /opt/red5311/webapps/openmeetings/WEB-INF/lib
```

Now we are going to form 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)

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

10)

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

Please, unload the red5 run script:

```
cd /opt
```

(One line only without space)

wget <https://cwiki.apache.org/confluence/download/attachments/27838216/red5?version=4&modificationDate=1458903758300&api=v2>

...when the download is finished push **Ctrl+c** keyboard.

Rename the file unloaded to red5:

```
mv red5?version=4 red5
```

...and copy it to:

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

Concede permission of execution:

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

11)

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

Start MariaDB if still it is not:

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

...and now start red5-OpenMeetings:

```
/etc/init.d/red5 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 20 seconds **at least** in order that red5 it is runing completely, and later 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.arrozcru.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 should use 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:

The screenshot shows the 'OpenMeetings' application window with the 'DB configuration' section. 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. Navigation buttons '<', '>', '>>', and 'Finish' are at the bottom of the window.

<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 9, or with your own modifications.

Please, push  button, and will go to:

The screenshot shows the 'OpenMeetings' application window with the 'Userdata' section. 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. Navigation buttons '<', '>', '>>', and 'Finish' are at the bottom of the window.

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

<b>Group(Domains)</b>	
Name	<input type="text"/>

Now we must introduce the followings data:

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

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

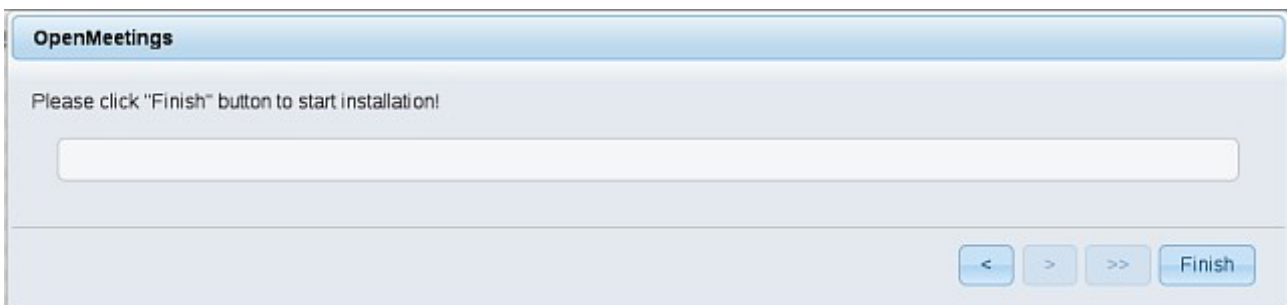
**Email** = email-adress ...of the previous user.

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

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

When the installation be finished, should configure the rest.

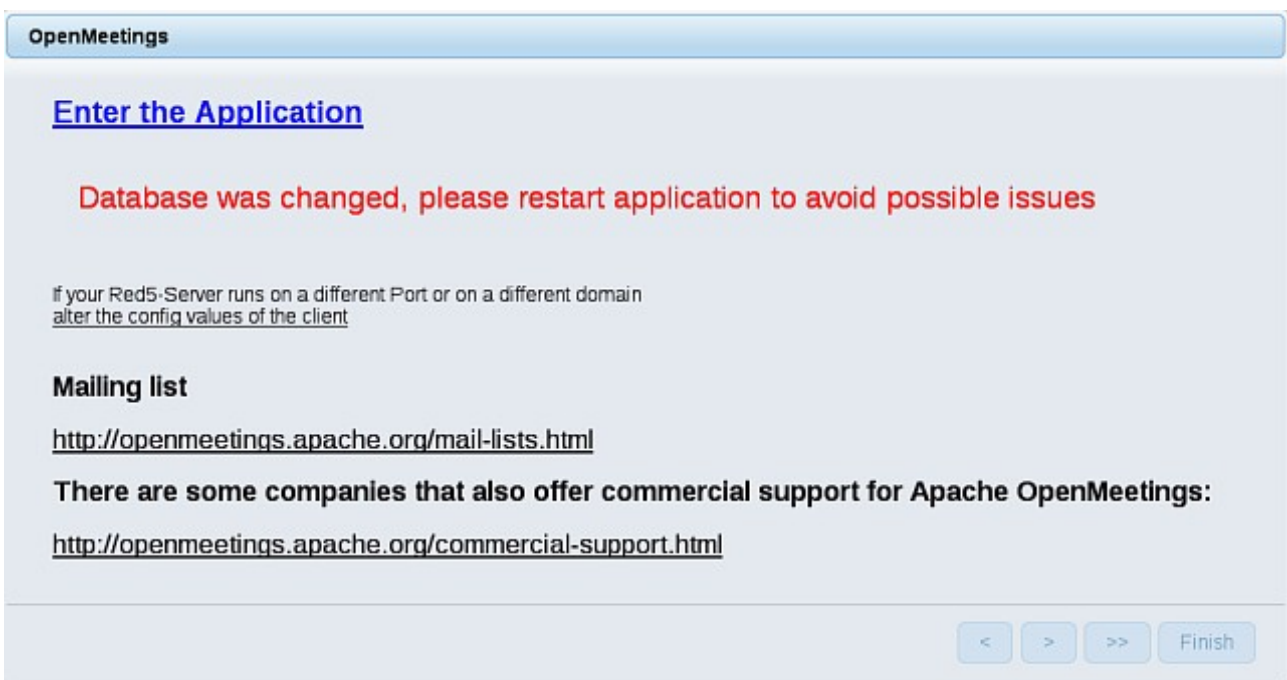
Now go to bottom page and push the button  (double arrow). Will show this:



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:

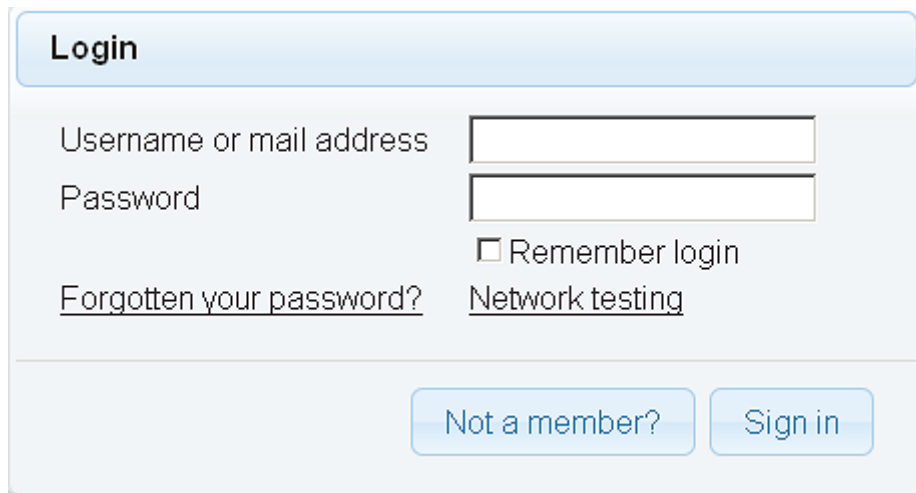
[/etc/init.d/red5 restart](#)



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:



**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 to 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.

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	...	...
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	

**Configuration**

Key: swftools\_path  
Value:

Last update: 26.02.2016 08:48:28  
Updated by: idro  
Comment: Path To SWF-Tools

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-5.1.38.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