

Installation of Apache OpenMeetings 7.2.0 on Arch Linux

This tutorial is based on a fresh installations of

arch-anywhere-2.2.9-x86_64.iso

Arch Anywhere, it is a pure Arch Linux, with the only difference that the installation it is graphical.

My sincere thanks to Maxim Solodovnik for his help, without which i could not have finished this tutorial satisfactorily. It is made step by step.

1)

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

Update the system:

`sudo pacman -Syu`

2)

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

Java 17 it is necessary for OpenMeetings 7.2.0. We'll install Open Java 17.

```
sudo pacman -S jdk17-openjdk
```

Do OpenJava 17 as default (maybe is another java versions installed):

```
sudo archlinux-java set java-17-openjdk
```

3)

----- **Installation of LibreOffice** -----

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

We install it:

```
sudo pacman -S libreoffice
```

...press **Enter** to any question.

4)

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

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

(Only one line with space between each one of them)

```
sudo pacman -S libjpeg ghostscript unzip gcc neurses make zlib libtool bison bzip2 file-roller  
autoconf automake pkgconfig tomcat-native nmap curl freetype2 nano base-devel fakeroot jshon  
expac git wget
```

...press **Enter** to any question.

5)

----- **Installation ImageMagick and Sox** -----

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

```
sudo pacman -S imagemagick
```

We modify ImageMagick, so OpenMeetings can upload office files to whiteboard:

```
sudo nano /etc/ImageMagick-7/policy.xml
```

...and comment the following lines, if is not, , near to bottom file:

```
<policy domain="module" rights="none" pattern="{PS,PDF,XPS}" />
```

```
<policy domain="delegate" rights="none" pattern="gs" />
```

...to

```
<!-- <policy domain="module" rights="none" pattern="{PS,PDF,XPS}" /> -->
```

```
<!-- <policy domain="delegate" rights="none" pattern="gs" /> -->
```

Press in the keyboard **Ctrl+x**, will ask to save, press **Y**, and press **Enter** to exit nano editor.

Sox, work the sound. Install it:

```
sudo pacman -S sox
```

6)

----- Installation of FFmpeg -----

FFmpeg work with video. Will install it and vlc to play the recordings that we'll make in OpenMeetings:

```
sudo pacman -S ffmpeg vlc
```

7)

----- Installation of MariaDB data base server -----

MariaDB is the data base server. We install it:

```
sudo pacman -S mariadb
```

Initialize data directories:

```
sudo mysql_install_db --user=mysql --basedir=/usr --datadir=/var/lib/mysql
```

...and run MariaDB:

```
sudo systemctl start mysqld
```

Give a password to root MariaDB. Please replace `new-password` by your own and remember it:

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

Access to MariaDB:

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

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

Make a database called `open720`, for OpenMeetings:

```
MariaDB [(none)]> CREATE DATABASE open720 DEFAULT CHARACTER SET 'utf8';
```

Now we create a user with all permission on this `open720` database:

(Only one line with space between both)

```
MariaDB [(none)]> GRANT ALL PRIVILEGES ON open720.* TO 'hola'@'localhost'  
IDENTIFIED BY '1a2B3c4D' WITH GRANT OPTION;
```

```
* open720 ..... name of the database  
* hola ..... user for that database  
* 1a2B3c4D .....password of this user
```

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

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

8)

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

We'll install OpenMeetings in `/opt/open720`. All the following information will be based on this directory:

```
cd /opt
```

...download the OpenMeetings file:

```
sudo wget https://archive.apache.org/dist/openmeetings/7.2.0/bin/apache-openmeetings-7.2.0.tar.gz
```

...uncompress it:

```
sudo tar xzvf apache-openmeetings-7.2.0.tar.gz
```

...rename the obtained folder:

```
sudo mv apache-openmeetings-7.2.0 open720
```

...and we do to **nobody** owner of the folder installation:

```
sudo chown -R nobody /opt/open720
```

Download and install the connector between OpenMeetings and MariaDB:

(Only one line without space between both)

```
sudo wget https://repo1.maven.org/maven2/mysql/mysql-connector-java/8.0.30/mysql-connector-java-8.0.30.jar
```

...and copy it to where must be:

```
sudo cp /opt/mysql-connector-java-8.0.30.jar /opt/open720/webapps/openmeetings/WEB-INF/lib
```

9)

----- **Script to launch Tomcat-OpenMeetings** -----

We make the folder /etc/init.d where put the Tomcat-OpenMeetings run script:

```
sudo mkdir /etc/init.d
```

Download the script to run tomcat-OpenMeetings:

```
cd /opt
```

```
sudo wget https://cwiki.apache.org/confluence/download/attachments/27838216/tomcat34
```

...copy it to where must be:

```
sudo cp tomcat34 /etc/init.d/
```

...concede execution permission:

```
sudo chmod +x /etc/init.d/tomcat34
```

If you would made the installation in any other different path to /opt/open720, please edit the script and modify the line:

```
CATALINA_HOME==/opt/open720
```

...to

```
CATALINA_HOME==/your-path-installation
```

10)

----- **Run Tomcat-OpenMeetings** -----

Restart MariaDB:

```
sudo systemctl restart mysqld
```

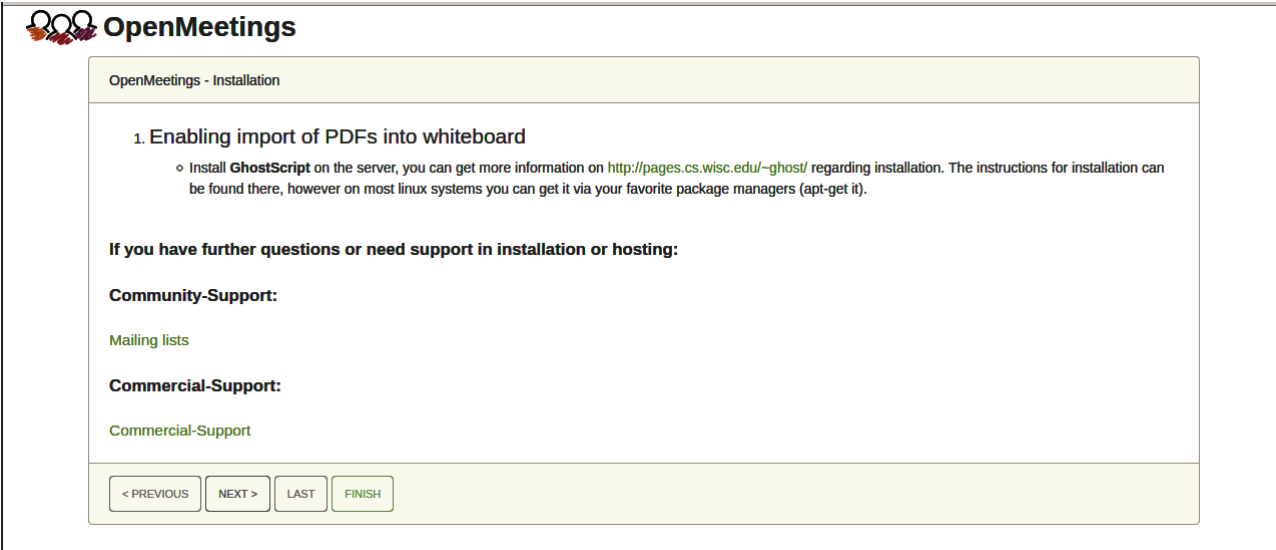
...and run tomcat-OpenMeetings:

```
sudo /etc/init.d/tomcat34 start
```

...wait around 30 seconds for running Tomcat completely. Then, go with the browser to:

<https://localhost:5443/openmeetings/>

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



OpenMeetings

OpenMeetings - Installation

1. 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).

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

Community-Support:

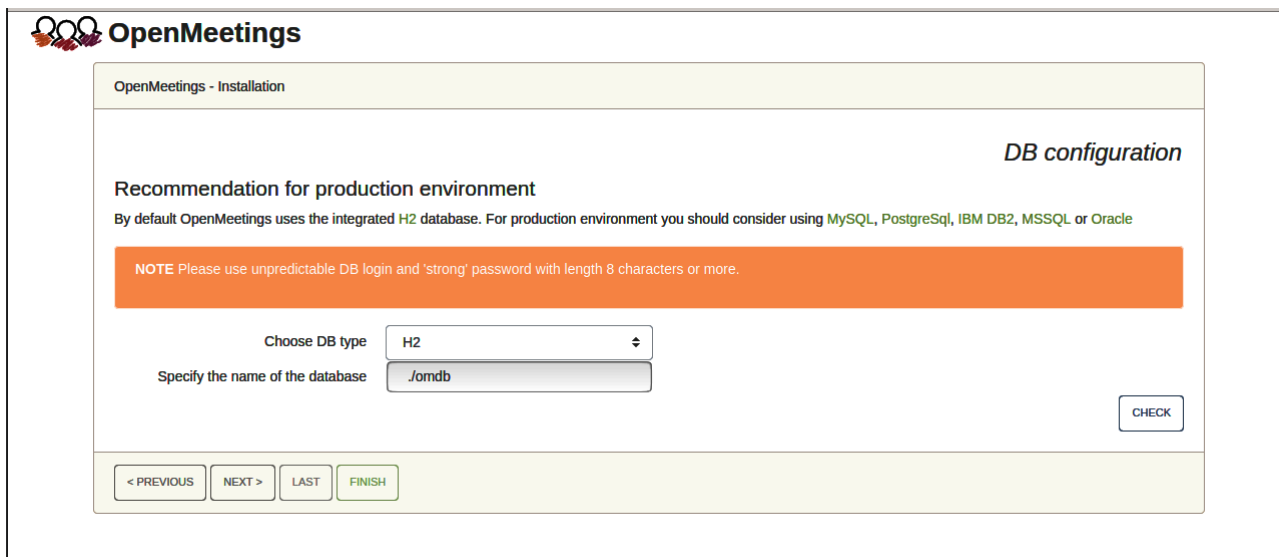
Mailing lists

Commercial-Support:

Commercial-Support

< PREVIOUS NEXT > LAST FINISH

...push on “Next >” (bottom), and will show the default configuration with H2, but we employ MySQL (MariaDB):



OpenMeetings

OpenMeetings - Installation

DB configuration

Recommendation for production environment

By default OpenMeetings uses the integrated H2 database. For production environment you should consider using MySQL, PostgreSQL, IBM DB2, MSSQL or Oracle

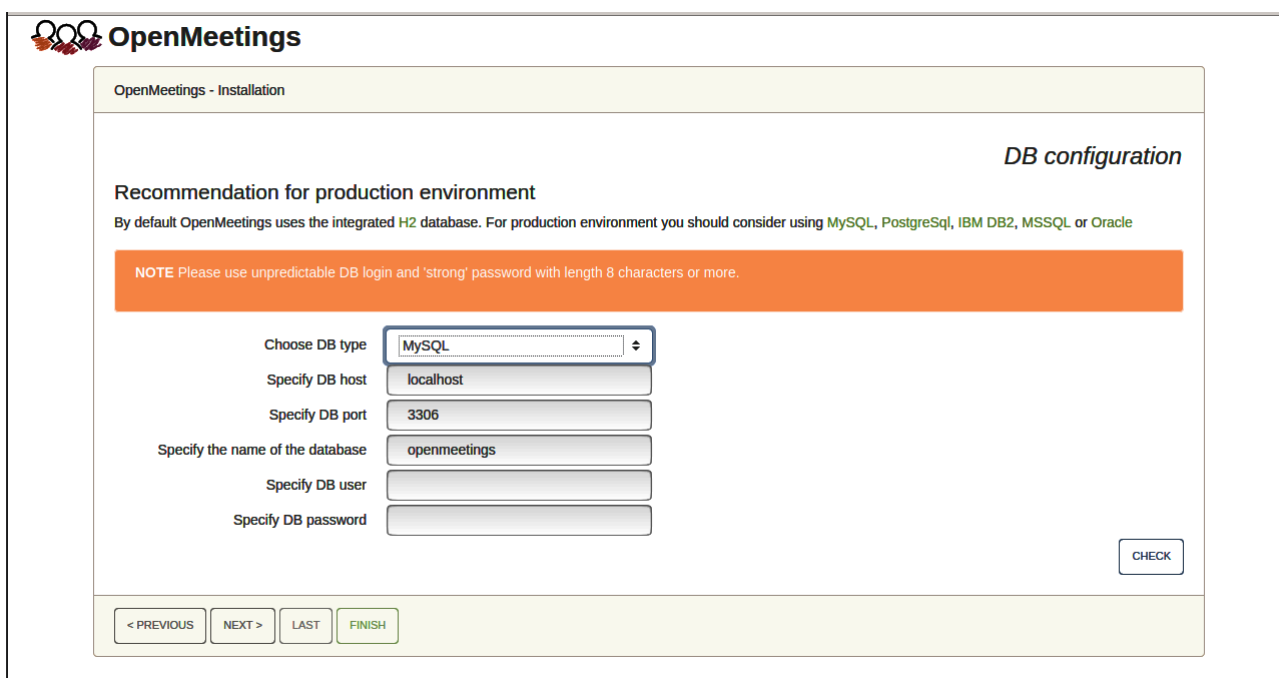
NOTE Please use unpredictable DB login and 'strong' password with length 8 characters or more.

Choose DB type:

Specify the name of the database:

< PREVIOUS NEXT > LAST FINISH

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



OpenMeetings

OpenMeetings - Installation

DB configuration

Recommendation for production environment

By default OpenMeetings uses the integrated H2 database. For production environment you should consider using MySQL, PostgreSQL, IBM DB2, MSSQL or Oracle

NOTE Please use unpredictable DB login and 'strong' password with length 8 characters or more.

Choose DB type:

Specify DB host:

Specify DB port:

Specify the name of the database:

Specify DB user:

Specify DB password:

< PREVIOUS NEXT > LAST FINISH

Now we must introduce the database name, user name and his password we did at the step 7:

Specify the name of the database = `open720`

Specify DB user = `hola`

Specify DB password = `1a2B3c4D`

If you choose different data please type it here.

Press “Next >” button, and will go to:

The screenshot shows the 'OpenMeetings - Installation' configuration page. It features a header with the OpenMeetings logo and title. Below the header, there is a form with the following fields and labels:

- Username**: Input field for the administrator's username.
- Userpass**: Input field for the administrator's password.
- EMail**: Input field for the administrator's email address.
- User Time Zone**: Dropdown menu currently set to 'Europe/Madrid'.
- Name**: Input field for the group name.

On the right side of the form, there are two labels: *Userdata* and *Group(Domains)*. At the bottom of the form, there are four buttons: '< PREVIOUS', 'NEXT >', 'LAST', and 'FINISH'.

Here, we must introduce a user name for OpenMeetings, and his password. This must have 8 digits minimum, and at least 1 special symbol like: + (% # ! ...etc.

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

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

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

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

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

Press the button “Next >” and will lead us to a new page (below) where you can select the language for your OpenMeetings server, as well as other options such as the configuration of the mail server being used to send invitations or meetings from OpenMeetings:

OpenMeetings - Installation

OpenMeetings - Installation

Configuration

Allow self-registering

Send Email to new registered Users

New Users need to verify their EMail

Default DB objects of all types will be created (including Rooms, OAuth2 servers etc.)

Mail-Referer

SMTP-Server

SMTP-Server Port(default SmtP-Server Port is 25)

SMTP-Username

SMTP-Userpass

Enable TLS in Mail Server Auth

Set inviter's email address as ReplyTo in email invitations

Default Language

< PREVIOUS NEXT > LAST FINISH

A valid example to configure the mail server with Gmail, is as follows:
 (replace **john@gmail.com** with your real Gmail account)

Mail-Refer	==	john@gmail.com
SMTP-Server	==	smtp.gmail.com
SMTP-Server Port (default SmtP-Server Port is 25)	==	587
SMTP-Username	==	john@gmail.com
SMTP-Userpass	==	password of john@gmail.com
Enable TLS in Mail Server Auth	==	...turn green the button to activate
Default Language	==	...select your language

...the rest you can change it as you like.

Now press the button “Next >” and a new page will appear:

OpenMeetings

OpenMeetings - Installation

Converters

Document conversion DPI ⓘ

Document conversion JPEG Quality ⓘ

ImageMagick Path ⓘ CHECK

FFMPEG Path ⓘ CHECK

SoX Path ⓘ CHECK

OpenOffice/LibreOffice Path for jodconverter ⓘ CHECK

see also Installation

< PREVIOUS NEXT > LAST FINISH

Here we'll introduce the respective paths for the image, video, audio and conversion of uploaded files:

ImageMagick Path == ...aquí dejar vacío

FFMPEG Path == ...aquí dejar vacío

SOX Path == ...aquí dejar vacío

OpenOffice/LibreOffice Path for jodconverter == [/usr/lib/libreoffice](#)

Once completed the paths, please click the “Next >” button and move on to another page that we will leave it as is:

OpenMeetings

OpenMeetings - Installation

Crypt Class ⓘ

Enable SIP ⓘ

SIP rooms prefix ⓘ

SIP extensions context ⓘ

Crypt Type

red5SIP Configuration

< PREVIOUS NEXT > LAST FINISH

Now, touch the button “**Next >**” Will show this window:

OpenMeetings

OpenMeetings - Installation

Please click "Finish" button to start installation!

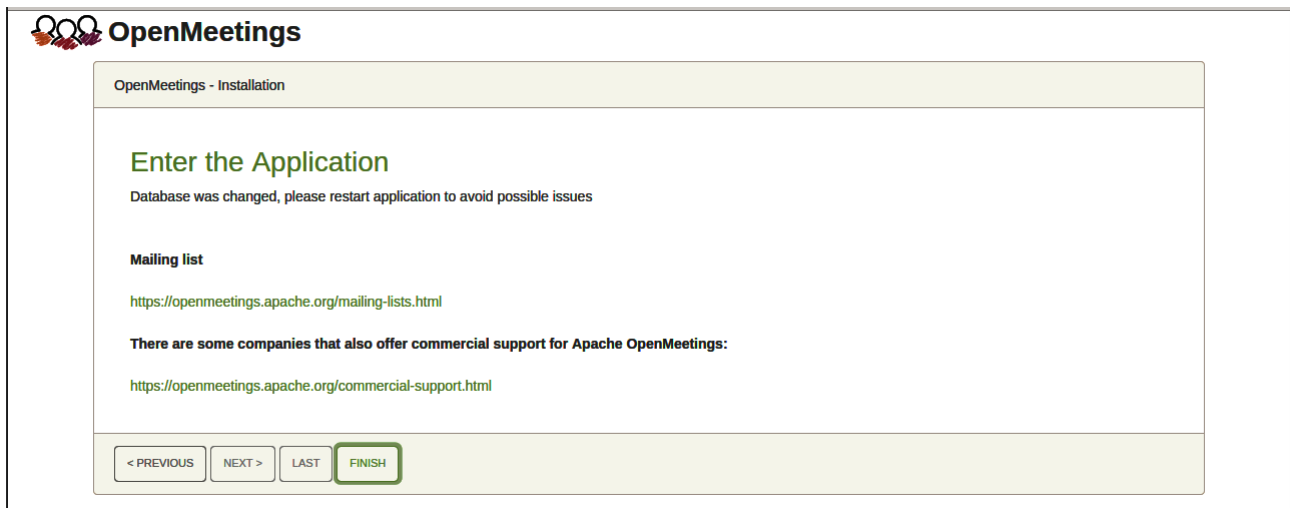
0%

< PREVIOUS NEXT > LAST FINISH

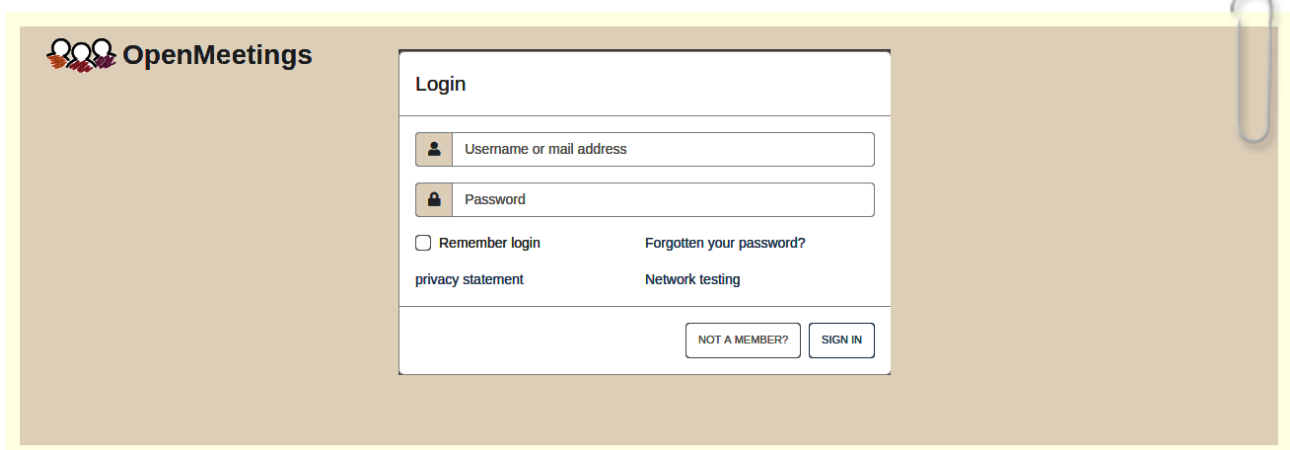
Press **Finish** button...wait a seconds until the tables are fill in our database.

When is concluded, this another page will appear. **Don't** clic on **Enter the Application**.
First is needed to restart tomcat server:

`sudo /etc/init.d/tomcat34 restart`



Now you can click on **Enter the Application** and it will take you to the OpenMeetings entry. But wait before entering OpenMeetings, we have to install Docker, Kurento-Media-Server and Coturn (Turn server), something we will do in the next steps, so that you can have access to the camera, micro, recording and desktop sharing in the room.



11)

----- Installation of Docker -----

We'll install Docker as recipient for kurento-media-server.

```
su
```

```
pacman -S docker
```

Add your user system to docker group and so can run docker without be root.

Replace **user** by your real system user name:

```
gpasswd -a user docker
```

```
su - ${USER}      ...to take effect the changes
```

```
su
```

...stop OpenMeetings and MariaDB:

```
/etc/init.d/tomcat34 stop
```

```
systemctl stop mysqld
```

...and reboot the machine. After this, follow in the step 12:

```
reboot
```

12)

----- Instalation of Kurento-Media-Server -----

After had rebooted the computer, we'll install Kurento-Media-Server needed for OM 7.2.0 (cam, mic-audio, recordings and share dektop in rooms). We'll install Kurento 6.18.0 version, needed for OpenMeetings 7.2.0 (can be Kurento 6.18+). If you have installed a before version please uninstall it like this...

First run docker:

```
sudo systemctl start docker.service
```

```
===== Uninstall old Kurento =====
```

```
sudo docker stop kms
```

```
sudo dockern rm kms
```

```
===== Finish uninstall old Kurento =====
```

...and now we'll install Kurento-media-serve 7.0.0. But first we'll create the folder where will be the video recorder files we should make in rooms, as well as the uploaded files and documents:

```
sudo mkdir -p /opt/om_data    (if you choose another path please substitute it below as well)
```

...and install kurento:

(Only one line, with space between both)

```
sudo docker run -d --name kms -p 8888:8888 --mount
type=bind,source=/opt/om_data,target=/opt/om_data kurento/kurento-media-server:6.18.0
```

If you made the installation of `/opt/om_data` in another path, please edit the script called "tomcat34" downloaded at step 9:

```
sudo nano /etc/init.d/tomcat34
```

and modify the line number 7:

```
export JAVA_OPTS="-Djava.awt.headless=true -DDATA_DIR=/opt/om_data"
```

...to

```
export JAVA_OPTS="-Djava.awt.headless=true -DDATA_DIR=/your-path-installation/om_data"
```

...press in the keyboard **Ctrl+x**, will ask to save, press **Y**, and press **Enter** to exit nano editor.

Restart OpenMeetings to take effect the changes:

```
sudo /etc/init.d/tomcat34 restart
```

13)

----- Coturn installation and configuration of Turn server-----

Install Coturn (Turn server make the connections between OpenMeetings clients, peer to peer):

```
sudo pacman -S coturn
```

Configuration of turn server.

First we create a password that we'll need to put it in the configuration file of the turn server and later in an OpenMeetings file. We create it:

```
sudo openssl rand -hex 32
```

...will generate something similar to this:

```
751c45cae60a2839711a94c8d6bf0089e78b2149ca602fdXXXXXXXXXXXXXXXXXXXX
```

...copy that long password and paste it into a text file by saving it.

Now edit the turn file configuration:

```
sudo nano /etc/turnserver/turnserver.conf
```

...in this file we will have to uncomment (delete #) the following lines (you'll find others uncommented):

```
use-auth-secret
```

```
static-auth-secret=751c45cae60a2839711a94c8d6bf0089e78b2149ca602fdXXXXXXXXXXXXXXXXX
```

(on the above line put the long password we just saved in a text file)

```
realm=your_real_domain ...change company.org to your real domain
```

```
stale-nonce=0 ...change 600 to 0 (zero)
```

```
log-file=/var/log/turnserver/turn.log
```

.

...exit the nano editor by pressing the **Ctrl+x** keys, ask if you save and press **Y** and then **Enter** to exit.

14)

----- Setting Up OpenMeetings 7.2.0 with Kurento media server-----

Edit the openmeetings.properties file of OpenMeetings: (if you made OpenMeetings installation in another different path please substitute it below)

```
sudo nano /opt/open720/webapps/openmeetings/WEB-INF/classes/openmeetings.properties
```

...and in the **### Kurento ###** section we modify only the following lines:

```
#### Kurento ###
```

```
kurento.turn.url=
```

```
kurento.turn.user=
```

```
kurento.turn.secret=
```

...to

```
kurento.turn.url=Public IP of your server:3478
```

```
kurento.turn.user=
```

```
kurento.turn.secret=751c45cae60a2839711a94c8d6bf0089e78b2149ca602fdXXXXXXXXXXXXXXXXX
```

...above, in:

kurento.turn.secret=751c45cae60a2839711a94c8d6bf0089e78b2149ca602fdXXXXXXXXXXXXXXXXXX

...replace the line: 751c45cae60a2839711a94c8d6bf0089e78b2149ca602fdXXXXXXXXXXXXXXXXXX

...by the long password that we generated in step 13 and that we save in a text file.

Exit the nano editor by pressing the **Ctrl+x** keys, ask if you save and press **Y** and then **Enter** to exit.

IS IMPORTANT...we must reboot the machine, and later to continue in the next step 15.

But before we'll stop the servers, if they are running:

```
sudo docker stop kms
```

```
sudo systemctl stop turnserver.service
```

```
sudo /etc/init.d/tomcat34 stop
```

```
sudo systemctl stop mysqld.service
```

...and now reboot:

```
sudo reboot
```

15)

----- **Run the servers after rebooted the machine** -----

Run any server related with OpenMeetings:

MariaDB: `sudo systemctl start mysqld.service`

Docker: `sudo systemctl start docker.service`

Kurento: `sudo docker start kms`

Coturn (Turn server): `sudo systemctl start turnserver.service`

Tomcat-OpenMeetings: `sudo /etc/init.d/tomcat34 start`

16)

----- **Open ports required for servers**-----

We need open some ports in the router and the firewall for the servers access. These are:

3478 TCP-UDP IN

5443 TCP IN

8888 TCP IN

49152:65535 UDP IN-OUT

To open them (the firewall) with IPTables, these are the commands:

```
sudo iptables -A INPUT -p tcp -m tcp --dport 3478 -j ACCEPT
```

```
sudo iptables -A INPUT -p udp -m udp --dport 3478 -j ACCEPT
```

```
sudo iptables -A INPUT -p tcp -m tcp --dport 5443 -j ACCEPT
```

```
sudo iptables -A INPUT -p tcp -m tcp --dport 8888 -j ACCEPT
```

```
sudo iptables -A INPUT -p udp --match multiport --dports 49152:65535 -j ACCEPT
```

```
sudo iptables -A OUT -p udp --match multiport --dports 49152:65535 -j ACCEPT
```

...after run the commands we save the changes:

```
sudo service iptables save
```

...and restart IPTables:

```
sudo service iptables restart
```

Now you can access OpenMeetings.

Clic the link down and type the user name and his password you choosed in step 10:

<https://localhost:5443/openmeetings>

After installing OpenMeetings, you can find a tutorial for building SSL certificates Let's Encrypt needed for "https" url with wich will work OpenMeetings. Here is:

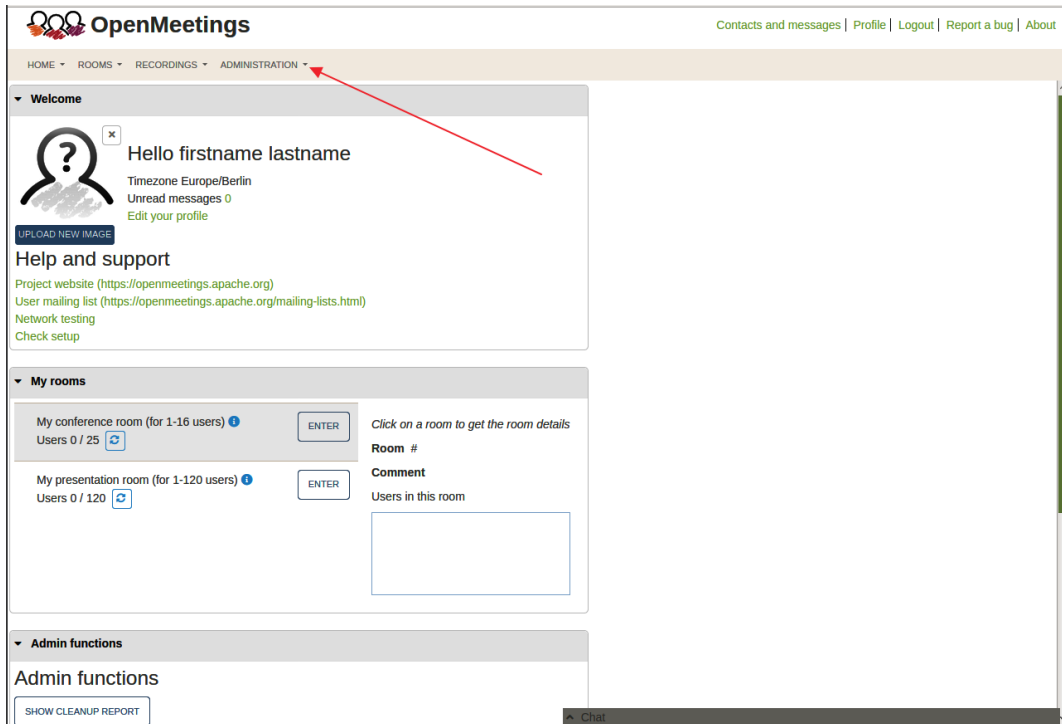
[Installation SSL certificates for OpenMeetings 7.2.0 on Arch Linux](#)

17)

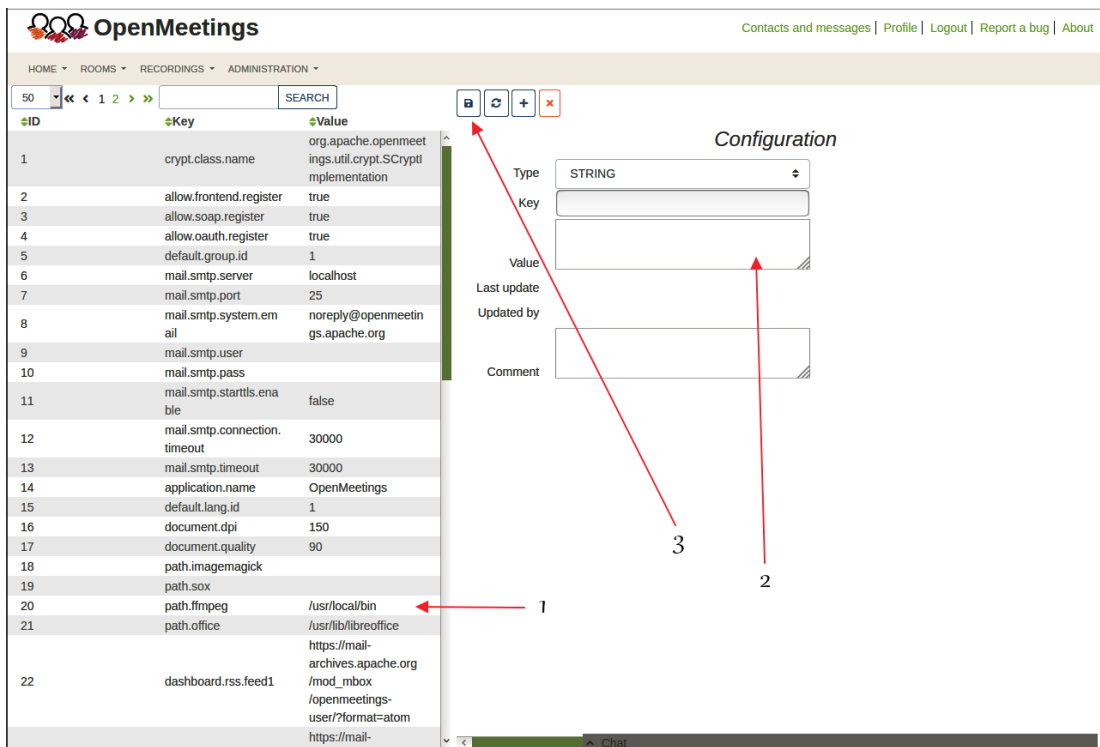
----- Configuration of OpenMeetings -----

Once you acced to OpenMeetings, if you would like to do any modification in the configuration, please go to:

Administration → Configuration



...and following the order of the red arrows:



And with this we conclude.

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

<https://openmeetings.apache.org/mailling-lists.html>



Also you can download if you like, a wallpaper of OpenMeetings for different devices such as:

PC, Mac, Smartphone, iPhone and Tablets. Here is the link to download:

[OpenMeetings Wallpaper Download](#)

A dvd live iso with OpenMeetings 7.2.0 on Ubuntu 18.04 lts is at your disposal. Can find it here:

[Live iso download](#)

Thank you.

Alvaro Bustos (PMC and Committer at Apache OpenMeetings)

