

## Installation of Apache OpenMeetings 7.1.0 on openSUSE Leap 15.5

This tutorial is made based on fresh installations of

**openSUSE-Leap-15.5-DVD-x86\_64-Media.iso**

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

1)

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

Update operative system:

`su`

`zypper refresh`

`zypper update`

2)

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

Java 17 is necessary to work Tomcat-OpenMeetings 7.1.0. So, we install OpenJava 17:

Add OpenJava repo:

```
zypper addrepo https://download.opensuse.org/repositories/home:ecsos/15.5/home:ecsos.repo
```

...refresh, typing a letter **a** when ask, to accept for always the keys:

```
zypper refresh
```

...and install OpenJava 17:

```
zypper install java-17-openjdk
```

```
export JRE_HOME=/usr/lib64/jvm/java-17-openjdk-17
```

Now we'll see if is installed more than one java version. If it is, then please select our OpenJava 17:

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

...and to see the active version:

```
java -version
```

3)

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

OpenMeetings need LibreOffice to convert to pdf, the uploaded office files.  
Maybe it is installed, but for iso server specially:

```
zypper install -y libreoffice
```

4)

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

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

(Only one line with space between both)

```
zypper install -y gcc ghostscript freetype freetype-devel ncurses ncurses-devel make libz1  
zlib-devel libtool bzip2 git autoconf automake pkg-config nano
```

5)

#### ----- Installation ImageMagick and Sox -----

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

```
zypper install -y ImageMagick giflib-devel
```

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

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

...and comment the two following lines near to bottom file:

```
<policy domain="coder" rights="none" pattern="PS" />
<policy domain="coder" rights="none" pattern="PDF" />
```

...to:

```
<!-- <policy domain="coder" rights="none" pattern="PS" /> -->
<!-- <policy domain="coder" rights="none" pattern="PDF" /> -->
```

Press in the keyboard **Ctrl+x**, will ask to save, press **Y**, and press **Enter** to exit nano editor. This last must be repeated every time you update ImageMagick.

**Sox**, work the sound. Install it:

```
zypper install -y sox
```

6)

#### ----- Compilation of FFmpeg and installation of packman repo -----

FFmpeg work the video. We install Packman repository to can install some libraries:

```
zypper ar -cfp 90 http://ftp.gwdg.de/pub/linux/misc/packman/suse/openSUSE_Leap_15.5/ packman
```

```
zypper update
```

...when ask, accept for allways typing the letter **a** and pressing **Enter**

(Only one line witht space between both)

```
zypper install -y glibc imlib2 imlib2-devel mercurial cmake freetype2-devel libfreetype6 curl git vlc
libvpx-devel libmp3lame-devel
```

This ffmpeg compilation is based in this url:

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

I made a script that will download, compile and install ffmpeg. Download the script:

```
cd /opt
```

```
wget https://cwiki.apache.org/confluence/download/attachments/27838216/ffmpeg_opensuse15.sh
```

...concede permission of execution:

```
chmod +x ffmpeg_opensuse15.sh
```

...and run it, be connected to Internet:

```
./ffmpeg_opensuse15.sh
```

Will spend about 20 minutes. When finish, will announce it with this text:

```
...FFmpeg Compilation is Finished!
```

...then, please go to step 7.

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

7)

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

MariaDB is the database server.

We install it:

```
zypper install -y mariadb mariadb-tools
```

...and run mariadb:

```
systemctl start mysql.service
```

Give a password to MariaDB root . Please, modify **new-password** by 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-mariadb password that we have just chosen:

```
MariaDB [(none)]> CREATE DATABASE open710 DEFAULT CHARACTER SET 'utf8';
```

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

(Only one line with space between both)

```
MariaDB [(none)]> GRANT ALL PRIVILEGES ON open710.* TO 'hola'@'localhost'  
IDENTIFIED BY '1a2B3c4D' WITH GRANT OPTION;
```

- \* open710 .....is the database name.
- \* hola .....is the user name for the database.
- \* 1a2B3c4D ..is the password of this user.

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

Now, we leave MariaDB:

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

8)

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

We'll install OpenMeetings in /opt/open710. All the following information will be based on this directory.

```
cd /opt
```

...download the OpenMeetings file:

```
wget https://archive.apache.org/dist/openmeetings/7.1.0/bin/apache-openmeetings-7.1.0.tar.gz
```

...uncompress it:

```
tar xzvf apache-openmeetings-7.1.0.tar.gz
```

...and rename the obtained folder:

```
mv apache-openmeetings-7.1.0 open710
```

Download and install the connector file between OpenMeetings and MariaDB:

```
cd /opt
```

(Only one line without space between both)

```
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:

```
cp /opt/mysql-connector-java-8.0.30.jar /opt/open710/webapps/openmeetings/WEB-INF/lib
```

9)

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

We'll download the script to run Tomcat-OpenMeetings:

```
cd /opt
```

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

...copy it to where must be:

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

...concede execution permission:

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

If you made the installation in any other different path to /opt/open710, please edit the script and modify the line:

```
CATALINA_HOME =/opt/open710
```

...to

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

10)

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

Restart mariadb, (be connected to Internet):

```
systemctl restart mysql.service
```

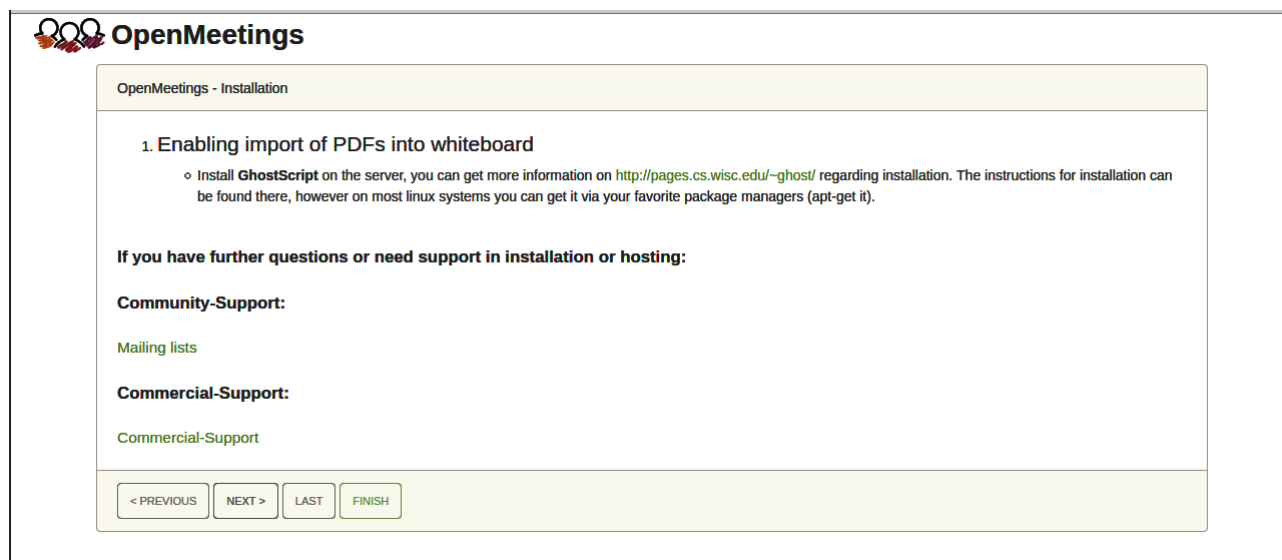
...and run tomcat-OpenMeetings, please, in a new window terminal:

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

...wait about 40 seconds in order tomcat can run completely. Then, go with the browser to:

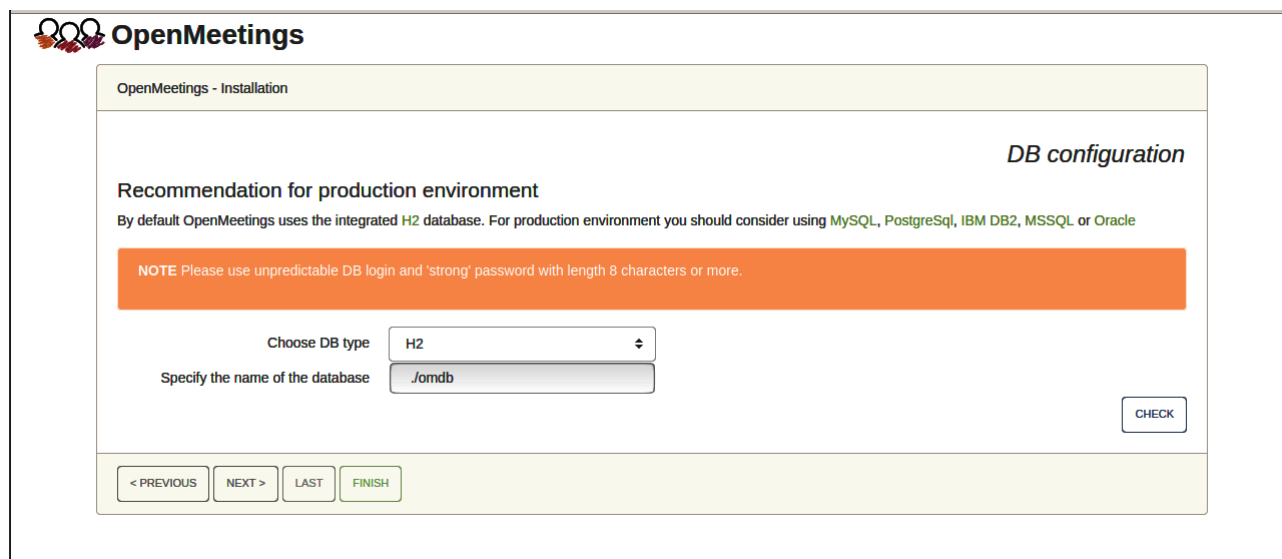
<https://localhost:5443/openmeetings/>

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



The screenshot shows the 'OpenMeetings - Installation' page. The title is 'OpenMeetings' with a logo of three hands. The main heading is 'OpenMeetings - Installation'. Below it, the first step is '1. Enabling import of PDFs into whiteboard'. A sub-point indicates to install GhostScript, with a link to <http://pages.cs.wisc.edu/~ghost/> for more information. Below this, there is a section for support: 'If you have further questions or need support in installation or hosting:'. Underneath, there are links for 'Community-Support:' (Mailing lists) and 'Commercial-Support:' (Commercial-Support). At the bottom, there are four buttons: '< PREVIOUS', 'NEXT >', 'LAST', and 'FINISH'.

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



The screenshot shows the 'OpenMeetings - Installation' page at the 'DB configuration' step. The title is 'OpenMeetings' with a logo of three hands. The main heading is 'OpenMeetings - Installation'. Below it, the title is 'DB configuration'. The main heading is 'Recommendation for production environment'. Below this, there is a note: 'By default OpenMeetings uses the integrated H2 database. For production environment you should consider using MySQL, PostgreSql, IBM DB2, MSSQL or Oracle'. Below this, there is an orange box with the text: 'NOTE Please use unpredictable DB login and 'strong' password with length 8 characters or more.'. Below this, there are two input fields: 'Choose DB type' with a dropdown menu showing 'H2' and 'Specify the name of the database' with a text input field containing '/omdb'. To the right of these fields is a 'CHECK' button. At the bottom, there are four buttons: '< PREVIOUS', 'NEXT >', 'LAST', and 'FINISH'.

...then, 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** = open710

**Specify DB user** = hola

**Specify DB password** = 1a2B3c4D

...if you choose any other data, please type it here.

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

**OpenMeetings**

OpenMeetings - Installation

*Userdata*

Username:

Userpass:

EMail:

User Time Zone:

*Group(Domains)*

Name:

< PREVIOUS    NEXT >    LAST    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 the 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**

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)

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

...the rest can modify 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** == ...here empty

**FFMPEG Path** == [/usr/local/bin](#)

**SOX Path** == ...here empty

**OpenOffice/LibreOffice Path for jodconverter** == [/usr/lib64/libreoffice](#)

As you go introducing paths, you can check if they are correct by pressing the button labeled **Check**.

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 ?

< PREVIOUS   NEXT >   LAST   FINISH

Crypt Type

red5SIP Configuration

Now push the button “**Next >**” and will show this window:

**OpenMeetings**

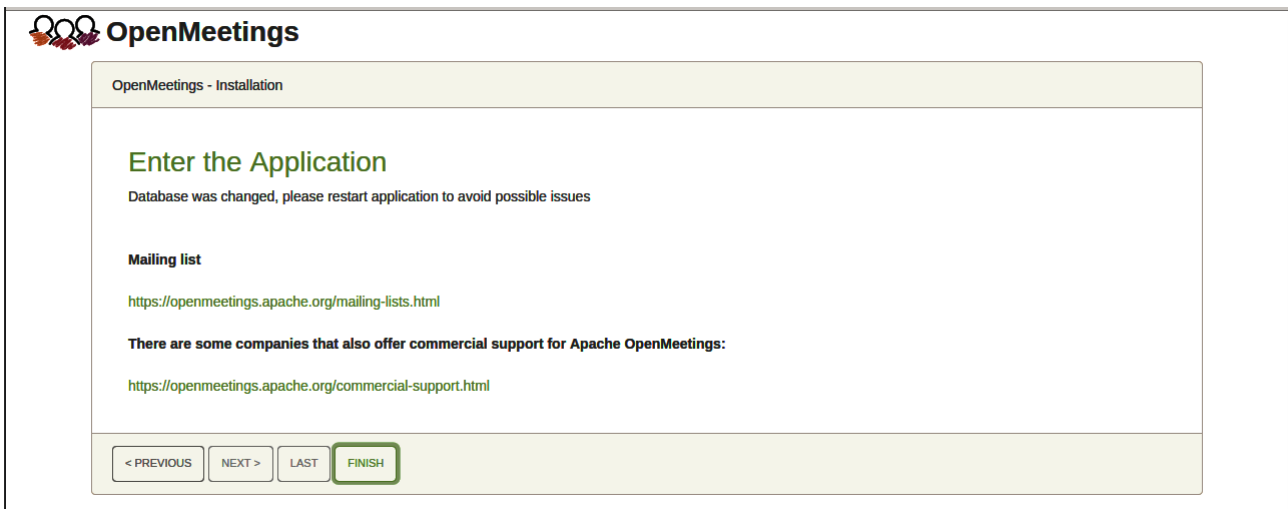
OpenMeetings - Installation

Please click "Finish" button to start installation!

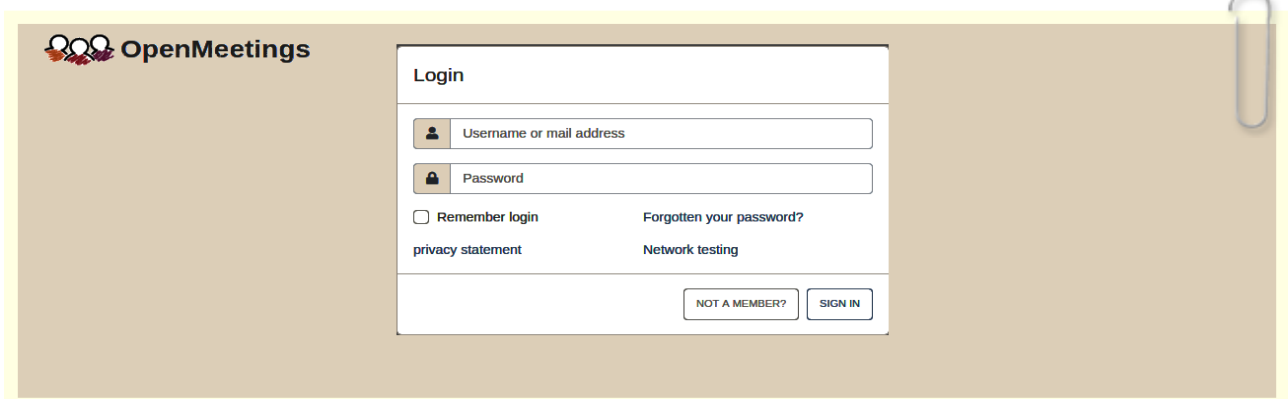
< PREVIOUS   NEXT >   LAST   FINISH

Press “**Finish**” button...wait a seconds until 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 terminal and restart tomcat:

`/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 Podman, 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 Podman -----

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

```
zypper install -y podman
```

...stop OpenMeetings, MariaDB and Podman:

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

```
systemctl stop mysql.service
```

```
systemctl stop podman.service
```

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

```
reboot
```

12)

## ----- Installation of Kurento-Media-Server -----

After had rebooted the computer, we'll install Kurento-Media-Server needed for cam, mic-audio, recordings and share dektop in rooms). We'll install Kurento 7.0.0 version, needed for OpenMeetings 7.1.0 (can be Kurento 6.18+). If you have installed a before version please uninstall it like this:

First run Podman:

```
systemctl start podman.service
```

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

```
podman stop kms
```

```
podman rm kms
```

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

...and now we'll install kurento-media-server. 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:

```
mkdir -p /opt/om_data
```

...and install kurento 6.18.0:

(Only one line, with space between both)

```
podman 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 ask, please select the line that say [docker.io/kurento/...](https://docker.io/kurento/))

```
podman start kms          ...kms is Kurento Media Server
```

13)

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

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

```
zypper install 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 created it:

```
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:

```
nano /etc/coturn/turnserver.conf
```

...in this file we will have to uncomment (delete #) the following lines:

```
use-auth-secret
```

```
static-auth-secret=751c45cae60a2839711a94c8d6bf0089e78b2149ca602fdXXXXXXXXXXXXXXXXXXXX
```

(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=60 ...change 600 to 60
```

`log-file=/var/log/coturn/turnserver.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 7.1.0 with Kurento media server**-----

Edit the openmeetings.properties file of OpenMeetings:

`nano /opt/open710/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=751c45cae60a2839711a94c8d6bf0089e78b2149ca602fdXXXXXXXXXXXXXXXX
```

...above, in:

```
kurento.turn.secret=751c45cae60a2839711a94c8d6bf0089e78b2149ca602fdXXXXXXXXXXXXXXXX
```

...replace the line: `751c45cae60a2839711a94c8d6bf0089e78b2149ca602fdXXXXXXXXXXXXXXXX`

...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 after to continue in the next step 15.

But before we'll stop any server:

`podman stop kms`

`systemctl stop podman.service`

```
systemctl stop coturn.service
```

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

```
systemctl stop mysql.service
```

...and now reboot:

```
reboot
```

15)

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

Run any server related to OpenMeetings:

MariaDB: `systemctl start mysql.service`

Podman: `systemctl start podman.service`

Kurento: `podman start kms`

Coturn: `systemctl start coturn.service`

Tomcat-OpenMeetings: `/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:

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



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

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

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

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

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

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

```
service iptables save
```

...and restart IPTables:

```
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/openmeeting>

# 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 7.1.0 on openSUSE Leap 15.5](#)

The next time you like launch the servers, please do it following this order:

```
systemctl start mysql.service
```

```
systemctl start podman.service
```

```
podman start kms
```

```
systemctl start coturn.service
```

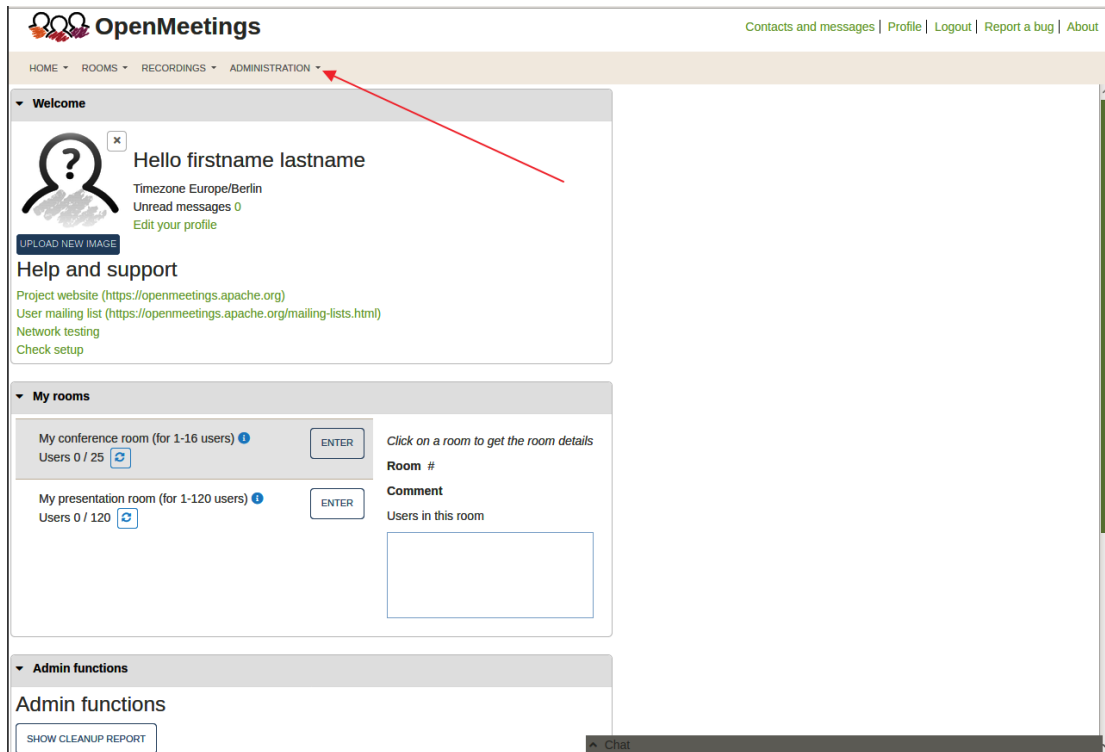
```
/etc/init.d/tomcat34 start
```

17)

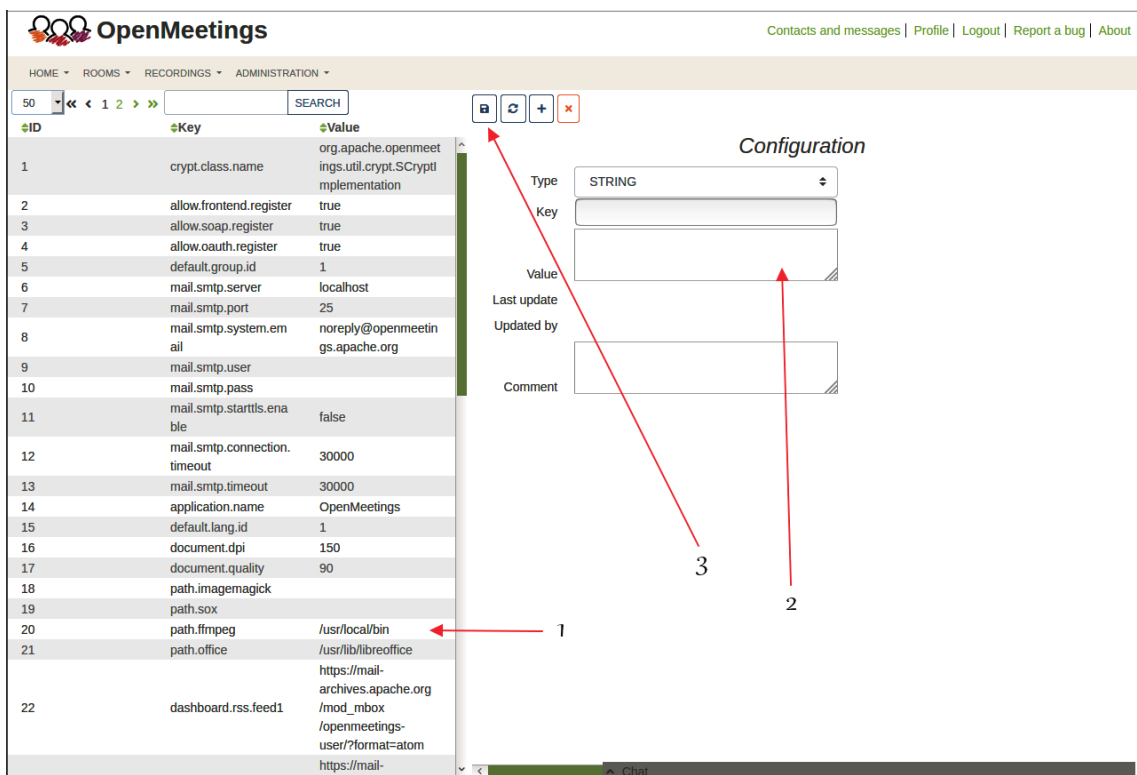
----- OpenMeetings's configuration -----

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:



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

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



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 7.1.0 on Ubuntu 18.04 lts, it is at your disposal.

Can find it here:

[Live iso download](#)

Thank you.

Alvaro Bustos (PMC and Committer at Apache OpenMeetings)

