



Installation of Apache OpenMeetings 7.2.0 on CentOS 7

This tutorial is made based on fresh installations of

CentOS-7-x86_64-Minimal-1708.iso

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.

Starting...

1)

We access to terminal as root::

`su`

....will ask for root password.

Install nano editor:

```
yum install -y nano wget curl
```

Add our user system to sudoers, so can use sudo:

```
nano /etc/sudoers
```

...copy and paste replacing **user** by your real user system name:

```
user ALL=(ALL:ALL) ALL
```

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

Now will change the selinux configuration, enforcing to permissive:

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

...modify:

```
SELINUX=enforcing
```

...to

```
SELINUX=permissive
```

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

Update the system:

```
yum update -y
```

...and reboot the machine to get effect the changes. After reboot please continue at step 2:

```
reboot
```

2)

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

```
sudo yum install -y wget
```

EPEL:

```
sudo wget https://dl.fedoraproject.org/pub/epel/epel-release-latest-7.noarch.rpm
```

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

Nux

(Only one line without space between both)

```
sudo rpm -Uvh http://li.nux.ro/download/nux/dextop/el7/x86_64/nux-dextop-release-0-5.el7.nux.noarch.rpm
```

3)

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

Java 17 is necessary for OpenMeetings 7.2.0. So we download OpenJava 17 file:

(Only one line without space between both)

```
sudo wget https://download.java.net/java/GA/jdk17.0.2/dfd4a8d0985749f896bed50d7138ee7f/8/GPL/openjdk-17.0.2_linux-x64_bin.tar.gz
```

...uncompress it:

```
sudo tar xzf openjdk-17.0.2_linux-x64_bin.tar.gz
```

...and install it in /opt:

```
sudo mv jdk-17.0.2 /opt/
```

```
sudo update-alternatives --install /usr/bin/java java /opt/jdk-17.0.2/bin/java 1
```

Maybe you have installed various versions of Java. Please select the just installed OpenJava 17:

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

And to see if the selected version is active:

```
java -version
```

4)

----- 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:

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

5)

----- Installation of Ghostscript, necessary packages and libraries -----

Will install packages and libraries we'll need later:

(All in only one line, with space between each one of them)

```
sudo yum install -y libjpeg libjpeg-devel freetype freetype-devel gcc gcc-c++ ncurses ncurses-devel  
make zlib zlib-devel libtool bison bison-devel openssl-devel bzip2 bzip2-devel git autoconf  
automake pkgconfig tomcat-native vlc
```

We access to terminal as root:

```
su
```

...will ask for root password.

With a script we should compile Ghostscript 9.52:

```
cd /opt
```

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

```
chmod +x ghostscript.sh
```

...and run it:

```
./ghostscript.sh
```

...when be finished will announce it: **GhostScript compilation is Finished!**

```
rm -Rf /opt/ghostscript-9.52
```

6)

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

ImageMagick, work the images files jpg, png, gif, etc. We install it and some libraries:

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

Sox, work the sound. Will compile it:

```
wget http://ftp.icm.edu.pl/packages/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
```

```
cd /opt
```

7)

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

FFmpeg work with video. Will install a paquets, libraries and vlc to play the recordings:

(Only one line without space between each one ofthem)

```
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 cmake freetype-devel  
git libtool make mercurial pkgconfig zlib-devel curl
```

This ffmpeg compilation is based on this url:

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

I made a script to compile and install ffmpeg on CentOS. It is tested and is ok.
The result of any recording we do in OpenMeetings will be in mp4 format.

When is finished, will appear a text:

FFmpeg Compilation is Finished!

So, we download the script:

```
cd /opt
```

```
wget https://cwiki.apache.org/confluence/download/attachments/27838216/ffmpeg_centos7.sh
```

...concede execution permission to it:

```
chmod +x ffmpeg_centos7.sh
```

...and run it. The compilation will spend about 30 minutes:

```
./ffmpeg_centos7.sh
```

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

When finish, please continue in the next step.

8)

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

Exit as root:

```
exit
```

MariaDB is the data base server. We install it:

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

...and run mariadb:

```
sudo systemctl start mariadb.service
```

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

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

Make a database for OpenMeetings.:

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

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

```
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 that user
```

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

MariaDB [(none)]> `quit`

9)

----- **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`

...and rename the obtained folder:

`sudo mv apache-openmeetings-7.2.0 open720`

Download and install the connector between OpenMeetings and MariaDB:

`cd /opt`

(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`

10)

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

We'll 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 made the installation in any other path to /opt/open720, please edit the script and modify the line:

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

...to

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

11)

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

Restart MariaDB:

```
sudo systemctl restart mariadb.service
```

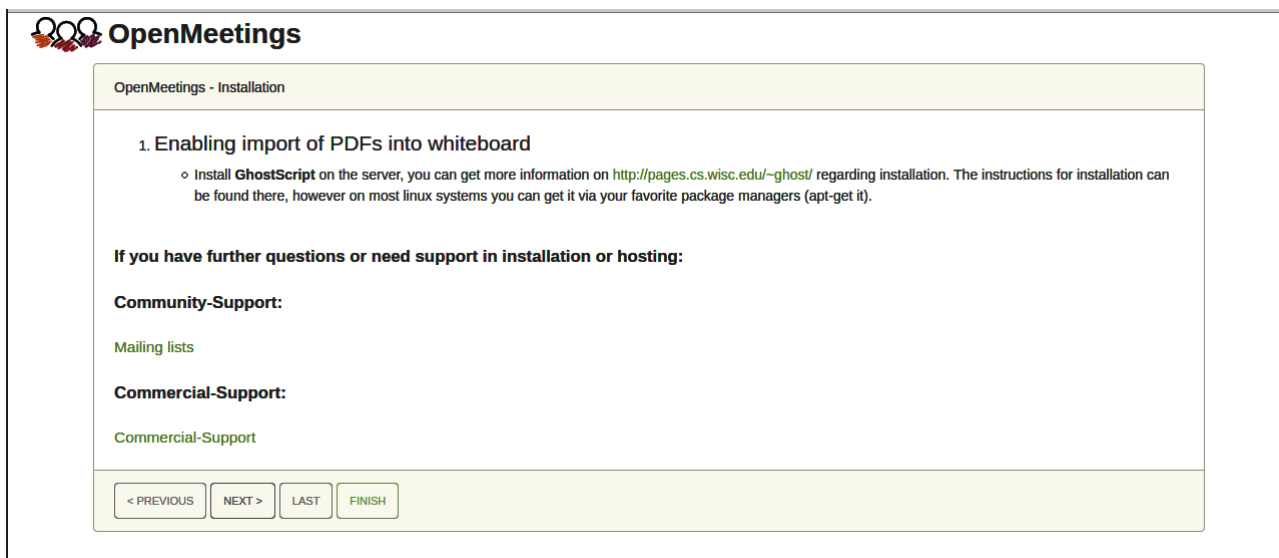
...and run tomcat-OpenMeetings:

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

...wait a minimum of 40 seconds in order tomcat run completely. Then, go with your 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:

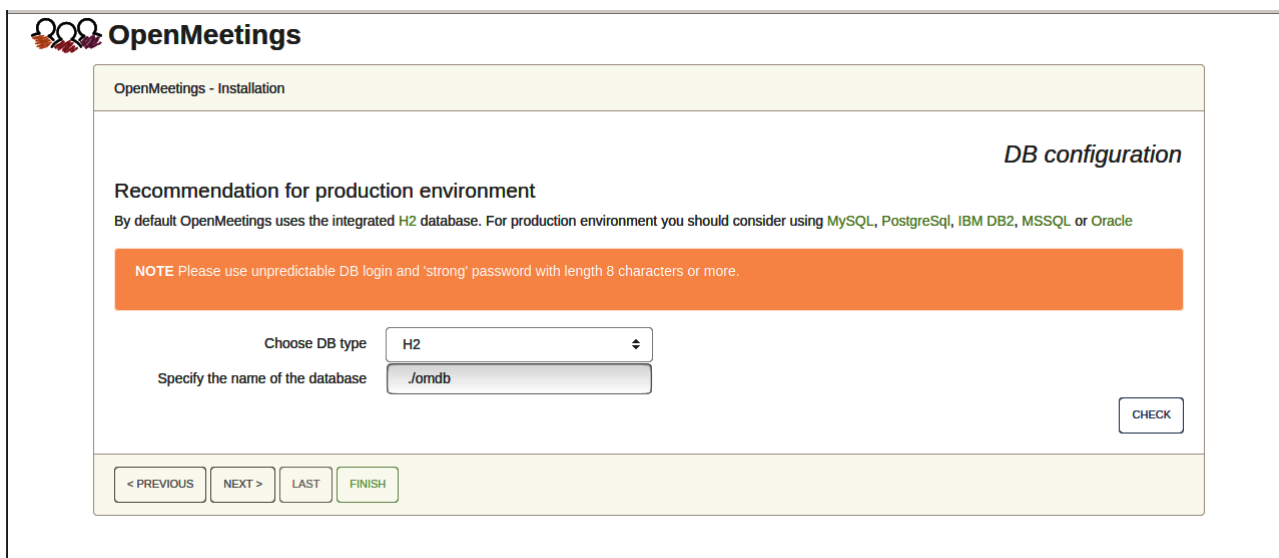
[Mailing lists](#)

Commercial-Support:

[Commercial-Support](#)

< PREVIOUS NEXT > LAST FINISH

...push on “**Next >**” (bottom), and will show the default database 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:

CHECK

< 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

Here we must introduce the database name, user name and his password we did at the step 8:

Specify the name of the database = open720

Specify DB user = hola

Specify DB password = 1a2B3c4D

Please, press “Next >” button and will go to:

OpenMeetings

OpenMeetings - Installation

Userdata

Username:

Userpass:

EMail:

User Time Zone:

Name:

Group(Domains)

< 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 Smp-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

To select the language of your server OpenMeetings, please scroll on the line:

Default Language	==	...select your language
-------------------------	----	-------------------------

...the rest we can leave as is. If is necessary, can modify it as you like it.

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	==	/usr/local/bin
OpenOffice/LibreOffice Path for jodconverter	==	/usr/lib64/libreoffice

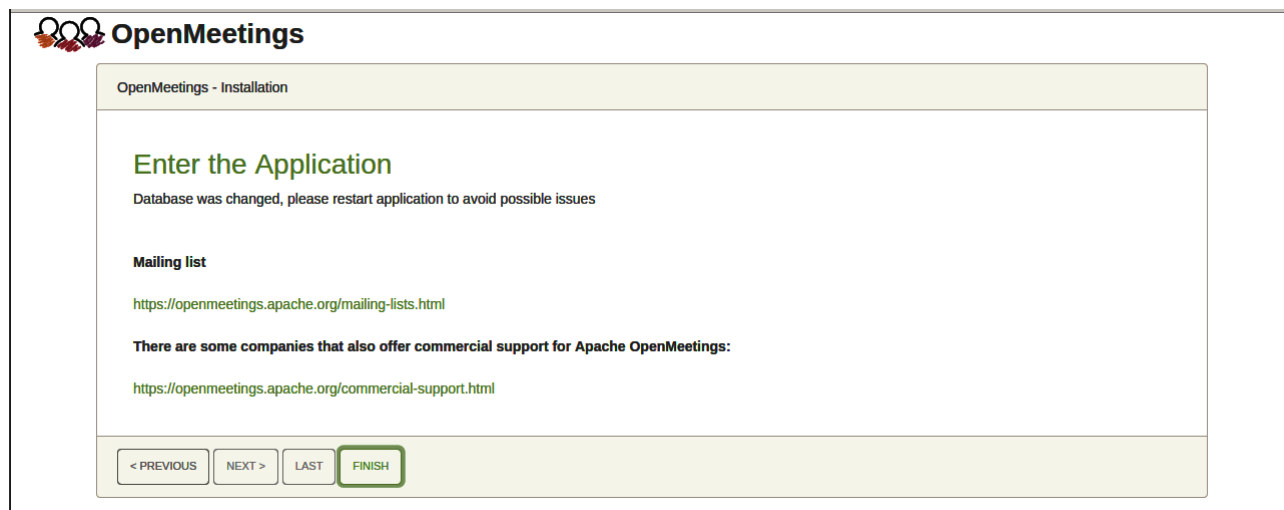
As you go introducing paths, you can check if they are correct by pressing the button labeled **Check**.

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

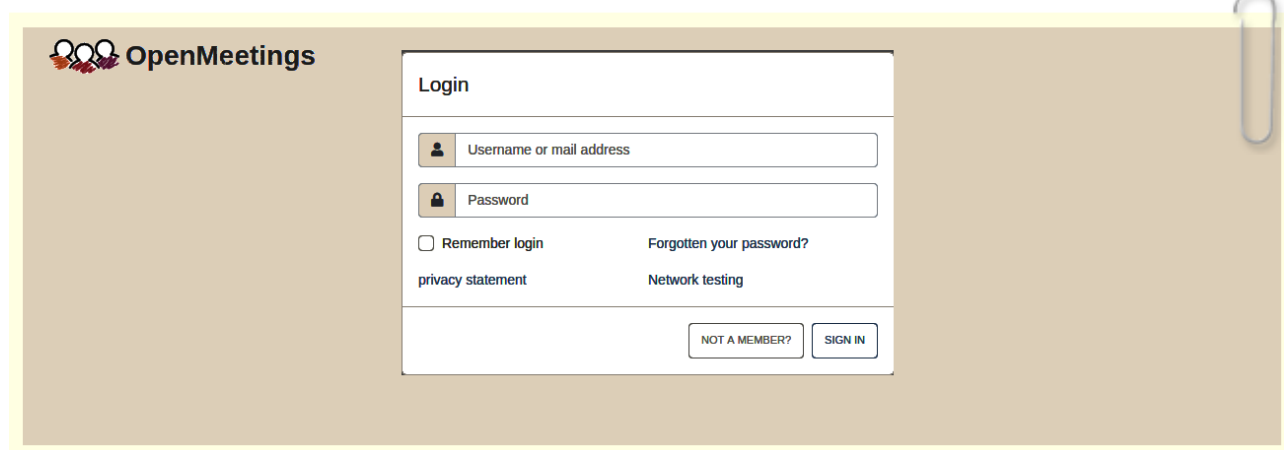
Now push the button “**Next >**” Will show this window:

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 tomcat server. Be connected to Internet:

```
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



12)

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

First install some necessary libraries:

```
sudo yum install -y yum-utils device-mapper-persistent-data lvm2
```

Add the Docker repo:

```
sudo yum-config-manager --add-repo https://download.docker.com/linux/centos/docker-ce.repo
```

...update:

```
sudo yum update
```

...install docker:

```
sudo yum install docker-ce docker-ce-cli containerd.io
```

Add your user system name to docker group and so can run docker without be root.
Replace **user** by your real system user name:

```
sudo gpasswd -a user docker
```

...stop tomcat and mariadb:

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

```
sudo systemctl stop mariadb.service
```

...and reboot the machine. After this, follow in the step 13:

```
sudo reboot
```

13)

----- 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 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 docker rm kms
```

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

...and now we'll install kurento-media-server 6.18.0. 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 10:

```
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
```

Run kurento-media-server, wich name its kms:

```
sudo docker start kms
```


14)

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

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

```
sudo yum 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:

```
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/coturn/turnserver.conf
```

...in this file we must uncomment (delete #) only 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    ...type your real domain
```

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

```
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.

15)

----- 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=751c45cae60a2839711a94c8d6bf0089e78b2149ca602fdXXXXXXXXXXXXXXXX
```

...above, in:

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

...replace the line: `751c45cae60a2839711a94c8d6bf0089e78b2149ca602fdXXXXXXXXXXXXXXXX`

...for the long password that we generated in step 14 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 continue in the next step 16
But before we stop the servers:

```
sudo docker stop kms
```

```
sudo systemctl stop docker.service
```

```
sudo systemctl stop coturn.service
```

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

```
sudo systemctl stop mariadb.service
```

...and now reboot:

```
sudo reboot
```

16)

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

Run any server related to OpenMeetings:

MariaDB: `sudo systemctl start mariadb.service`

Docker: `sudo systemctl start docker.service`

Kurento: `sudo docker start kms`

Coturn: `sudo systemctl start coturn.service`

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

17)

----- 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.

Click the link down and type the user name and his password chosen in step 11:

<https://localhost:5443/openmeetings>

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

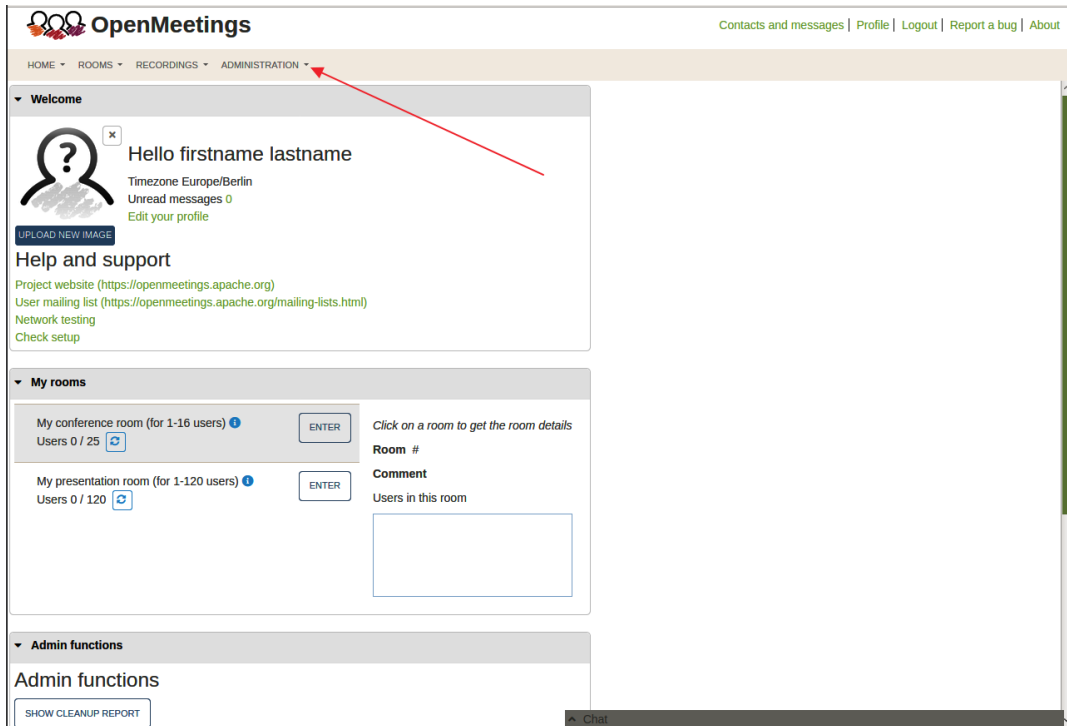
[Installation SSL certificates for OpenMeetings 7.2.0 on CentOS 7](#)

18)

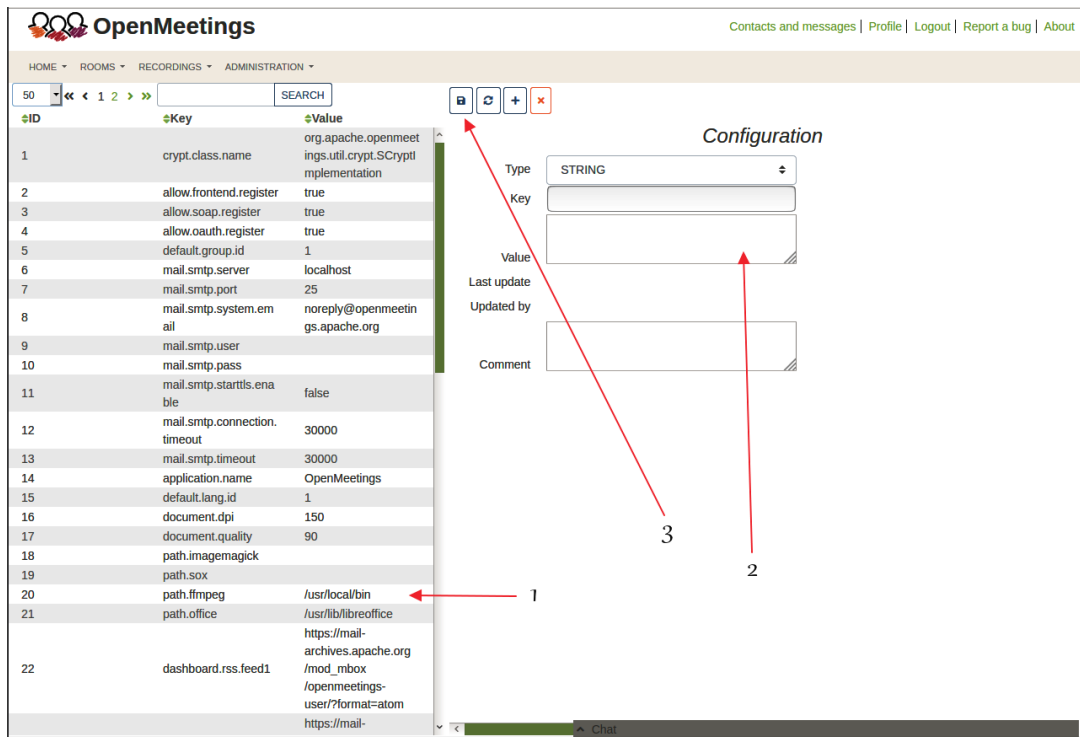
----- OpenMeetings's configuration -----

Once you access 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:



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, it is at your disposal.

Can find it here:

[Live iso download](#)

Thank you

Alvaro Bustos (PMC and Committer at Apache OpenMeetings).

