

Installation of Apache OpenMeetings 7.2.0 on Debian 11

The present tutorial is made based on a minimal fresh installations of

debian-11.0.0-amd64-netinst.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)

First, we update and upgrade the OS:

`sudo apt update`

`sudo apt upgrade`

2)

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

OpenMeetings 7.2.0 need Java 17 to work. So we install OpenJava 17:

```
sudo apt install openjdk-17-jdk openjdk-17-jdk-headless nano
```

Now, please, select OpenJava 17, if you have more than one java versions installed:

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

To see the active java version:

```
java -version
```

3)

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

LibreOffice is needed to convert to pdf the uploaded office files.

The ubuntu desktop iso have already LibreOffice installed.

But we install it specially for server iso:

```
sudo apt install libreoffice
```

4)

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

ImageMagick, will work the image files, png, jpg, gif, etc. Will install it and some more libraries:

```
sudo apt install -y imagemagick libjpeg62 zlib1g-dev
```

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

```
sudo nano /etc/ImageMagick-6/policy.xml
```

...and comment the following lines, if is not, 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.

Sox, work the sound. We install it:

```
sudo apt install sox
```

5)

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

FFmpeg will work the video. We install together to vlc for watch the videos:

```
sudo apt install ffmpeg vlc
```

6)

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

MariaDB is the data base server. Will install it:

```
sudo apt install mariadb-server
```

Run MariaDB:

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

Now we give a root password to MariaDB. Please, replace **new-password** with your own:

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

Make a database with his own user for OpenMeetings:

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

...will ask for the MariaDB root password that you have just chosen, type it...

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

(Only one line with space between both)

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

- * open720is the database name.
- * holais the user name for this database.
- * 1a2B3c4D ..is the password for this user.

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

...now we leave MariaDB:

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

7)

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

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

```
cd /opt
```

...download the tomcat-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
```

...and we do to “nobody” user owner of OpenMeetings installation folder:

```
sudo chown -R nobody:nogroup /opt/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
```

8)

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

Please, download the tomcat run script:

```
cd /opt
```

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

...copy it to:

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

...and concede permission of execution:

```
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
```

9)

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

Start MariaDB, if still it is not:

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

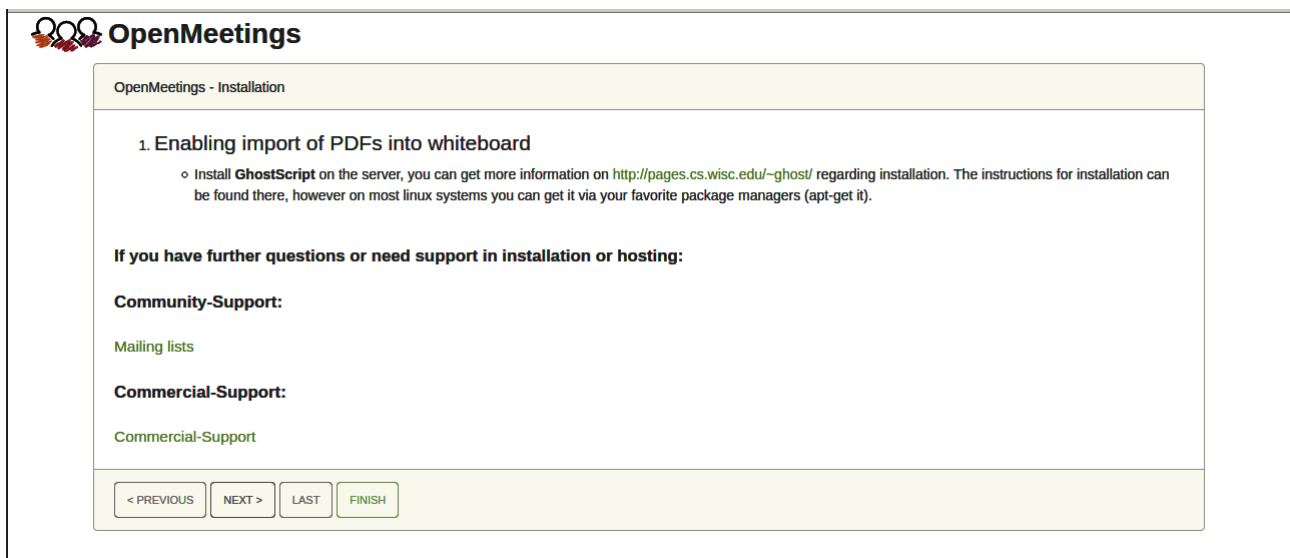
...and now start tomcat-OpenMeetings:

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

...wait 30 seconds at least, in order that tomcat running completely. And after this, can go to:

<https://localhost:5443/openmeeting>

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



The screenshot shows the 'OpenMeetings - Installation' page. It features a logo at the top left and a title 'OpenMeetings'. Below the title, there is a section titled 'OpenMeetings - Installation'. The main content area contains the following text:

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:

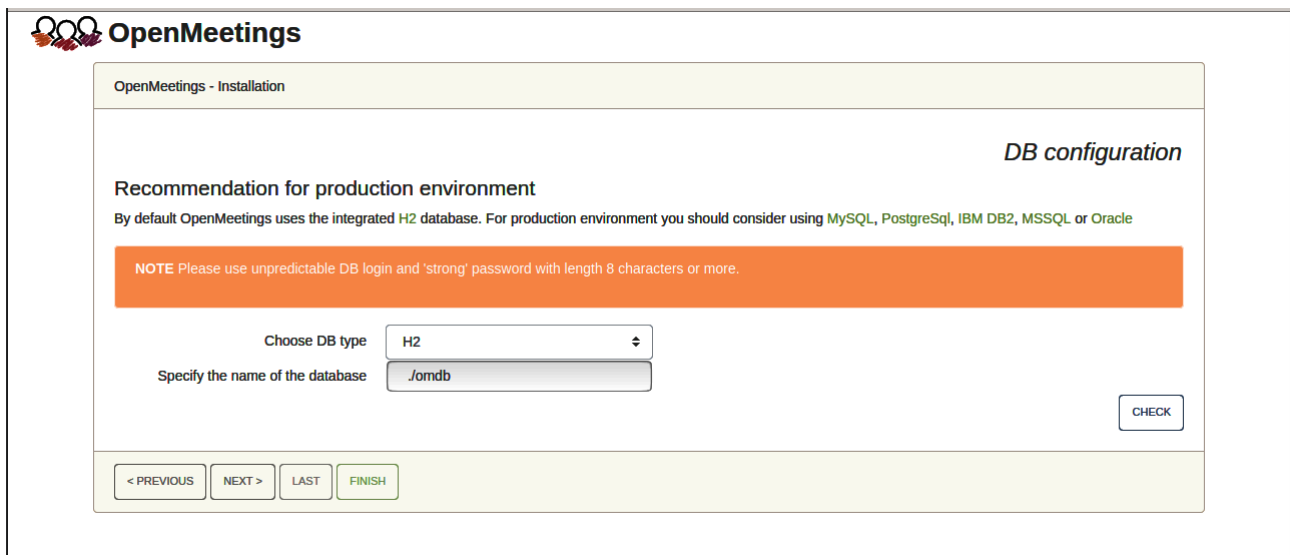
Mailing lists

Commercial-Support:

Commercial-Support

At the bottom of the page, there are four buttons: '< PREVIOUS', 'NEXT >', 'LAST', and 'FINISH'.

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



The screenshot shows the 'OpenMeetings - Installation' page with the 'DB configuration' section. It features a logo at the top left and a title 'OpenMeetings'. Below the title, there is a section titled 'OpenMeetings - Installation'. The main content area contains the following text:

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

At the bottom of the page, 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 6:

Specify the name of the database = [open720](#)

Specify DB user = [hola](#)

Specify DB password = [1a2B3c4D](#)

...if you choose any other data, please type it here. Push “**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 = **password** ...for the previous user.


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

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

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

Write down your username and password on a piece of paper, then it will be used to access OpenMeetings later.

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

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 likes.

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

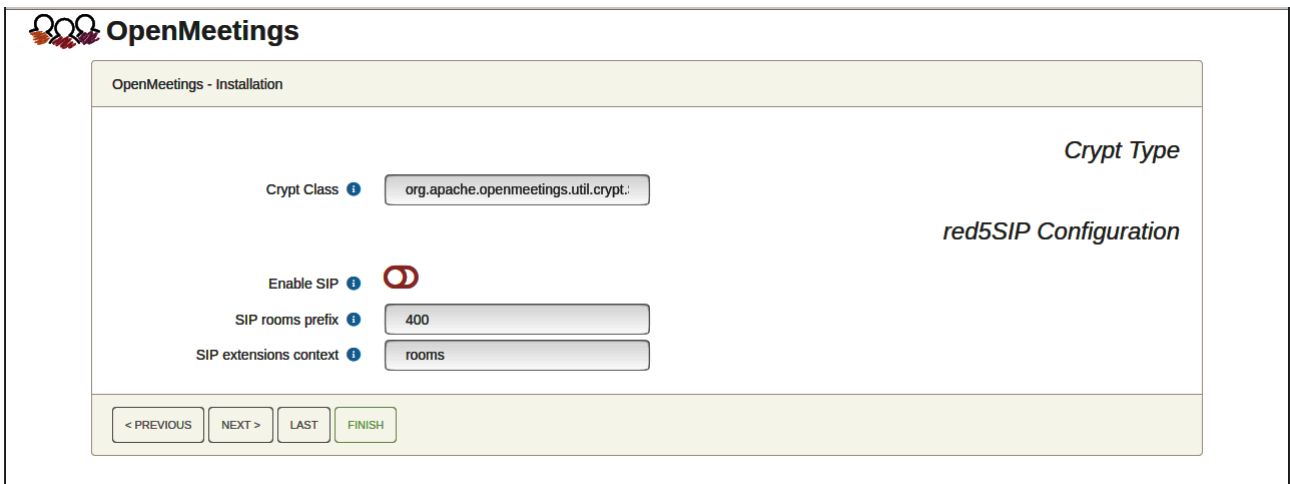
FFMPEG Path == ...here empty

SOX Path == ...here empty

OpenOffice/LibreOffice Path for jodconverter == [/usr/lib/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 button “**Next >**” and move on to another page that we will leave as is:

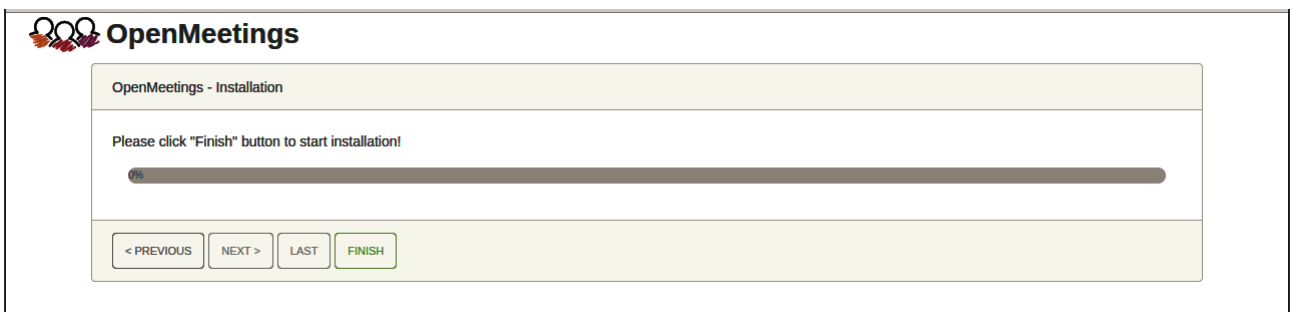


The screenshot shows the 'OpenMeetings - Installation' configuration page. It features several input fields and a radio button:

- Crypt Class:** A text input field containing 'org.apache.openmeetings.util.crypt..'.
- Enable SIP:** A radio button that is currently selected.
- SIP rooms prefix:** A text input field containing '400'.
- SIP extensions context:** A text input field containing 'rooms'.

At the bottom of the form, there are four buttons: '< PREVIOUS', 'NEXT >', 'LAST', and 'FINISH'. The 'FINISH' button is highlighted in green. On the right side of the page, the text 'Crypt Type' and 'red5SIP Configuration' is visible.

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



The screenshot shows the 'OpenMeetings - Installation' progress page. It features a progress bar and a message:

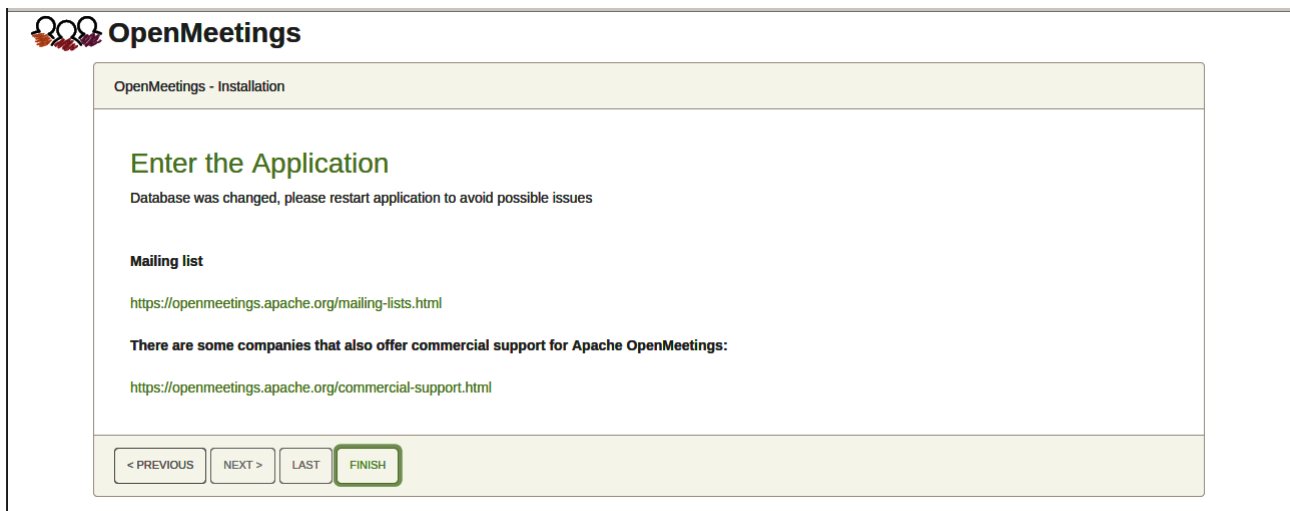
Please click "Finish" button to start installation!

The progress bar is a long horizontal bar with a small segment filled in, indicating progress. At the bottom of the page, there are four buttons: '< PREVIOUS', 'NEXT >', 'LAST', and 'FINISH'. The 'FINISH' button is highlighted in green.

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 needed restart the server:

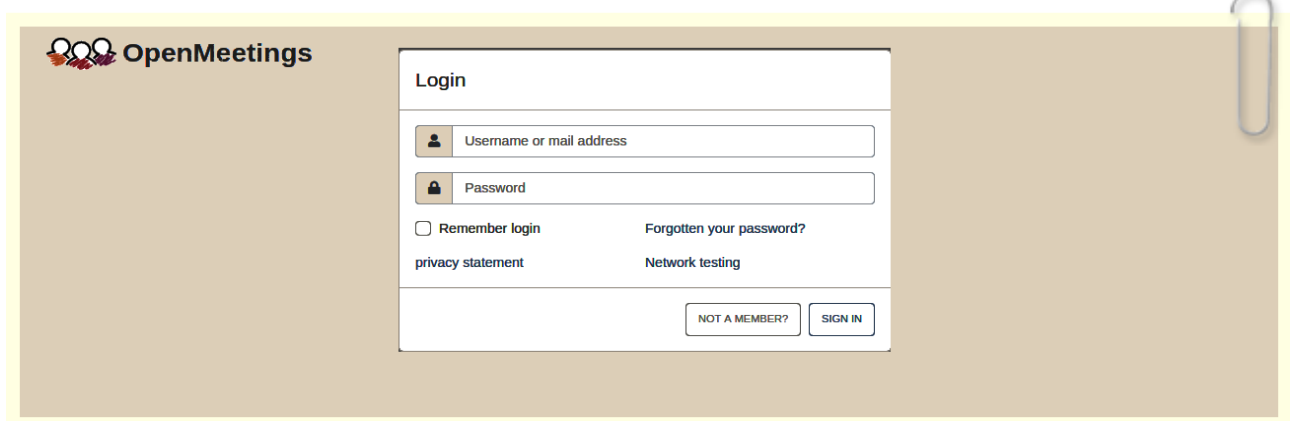
```
sudo /etc/init.d/tomcat34 restart
```



Now yes, you can clic on **Enter the Application**, or go with your browser to:

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

...and will take us to the entry of OpenMeetings:



Introduce the user's name and the password that you have chosen during the installation, push **“Sign in”** button. and...

...Congratulations!

After installing OpenMeetings, we still need to install Docker, Kurento-Media-Server and Coturn (Turn server), to have cam, mic-audio, recordings and share desktop. We'll install them at the next steps.

10)

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

We'll install Docker as recipient of Kurento Media Server. For that, we'll create his repository:

```
sudo nano /etc/apt/sources.list.d/docker.list
```

...and copy-paste the following line:

```
deb [arch=amd64] https://download.docker.com/linux/debian buster stable
```

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

Install the public claves for this repository:

```
sudo wget https://download.docker.com/linux/debian/gpg -O- | sudo apt-key add
```

...update:

```
sudo apt update
```

...and install Docker:

```
sudo apt install -y docker-ce docker-ce-cli containerd.io
```

To test it works right, we'll install "hello world":

```
sudo docker run hello-world
```

...and appear this announce:

```
"Hello from Docker!
```

```
This message shows that your installation appears to be working correctly."
```

```
.....  
.....
```

For a normal user, no root, can run Docker, we add it to docker group:

```
sudo adduser your-user docker
```

(change **your-user** by your real user system name)

11)

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

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 8:

```
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, wich name is kms:

```
sudo docker start kms
```

12)

----- **Coturn installation** (Turn server)-----

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

```
sudo apt install coturn
```

...we edit the following file so that the Turn server can work:

```
sudo nano /etc/default/coturn
```

...and we uncomment the line:

```
#TURNSEVER_ENABLED=1
```

....leaving it like this:

```
TURNSEVER_ENABLED=1
```

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

13)

----- **Setting of Turn server** -----

Now we'll set up Turn. Create a folder where turn server store the logs:

```
sudo mkdir -p /var/log/turnserver
```

...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.

Edit the turn configuration file:

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

...in this file we will have to 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 ...change company.org to your real domain
```

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

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

(above change /var/log/turnserver.log to /var/log/turnserver/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 7.2.0 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=751c45cae60a2839711a94c8d6bf0089e78b2149ca602fdXXXXXXXXXXXXXXXXXX
```

...above, in:

```
kurento.turn.secret=751c45cae60a2839711a94c8d6bf0089e78b2149ca602fdXXXXXXXXXXXXXXXXXX
```

...replace the line: 751c45cae60a2839711a94c8d6bf0089e78b2149ca602fdXXXXXXXXXXXXXXXXXX

...by the long password that we generated in step 12 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.

Restart coturn:

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

Restart docker:

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

Start Kurento:

```
sudo docker start kms
```

Restart Tomcat-OpenMeetings:

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

15)

----- 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

...if you have installed gufw (ufw firewall interface) you can open them directly from there adding rules.

In case you prefer 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 launching 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 9:

<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:

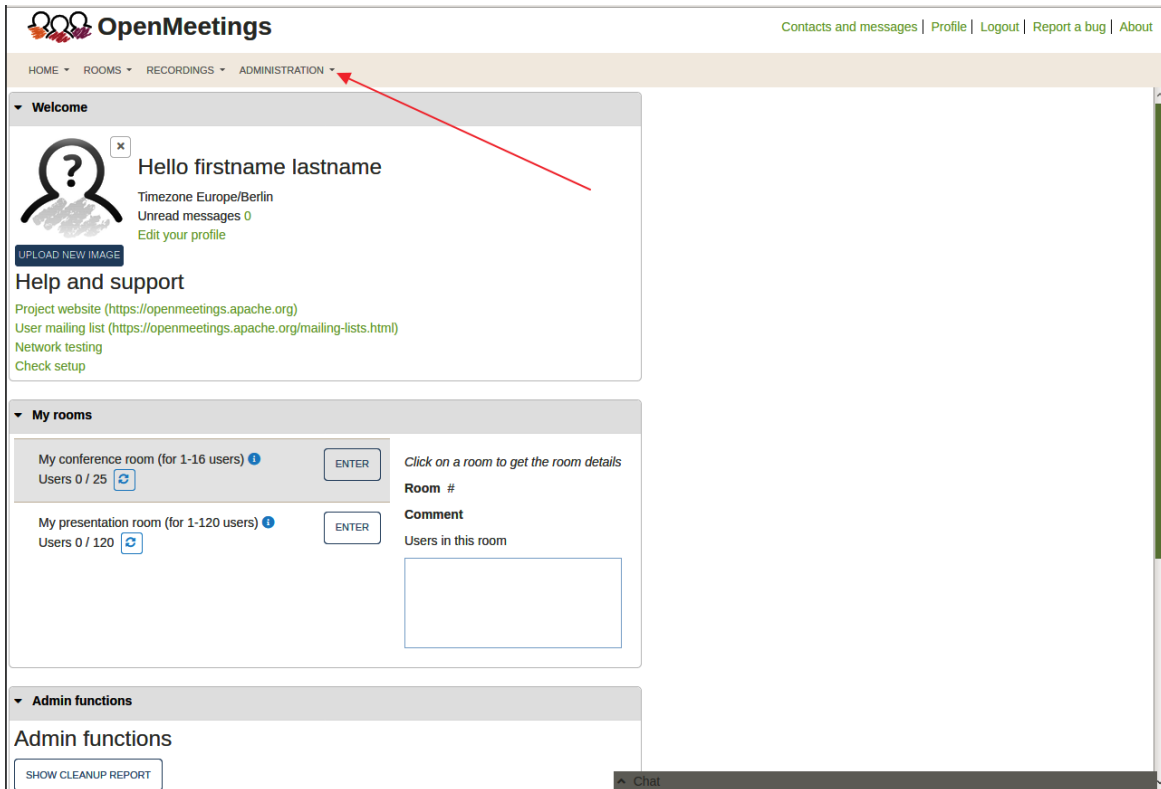
[Installation SSL certificates for OpenMeetings 7.2.0 on Debian 11](#)

16)

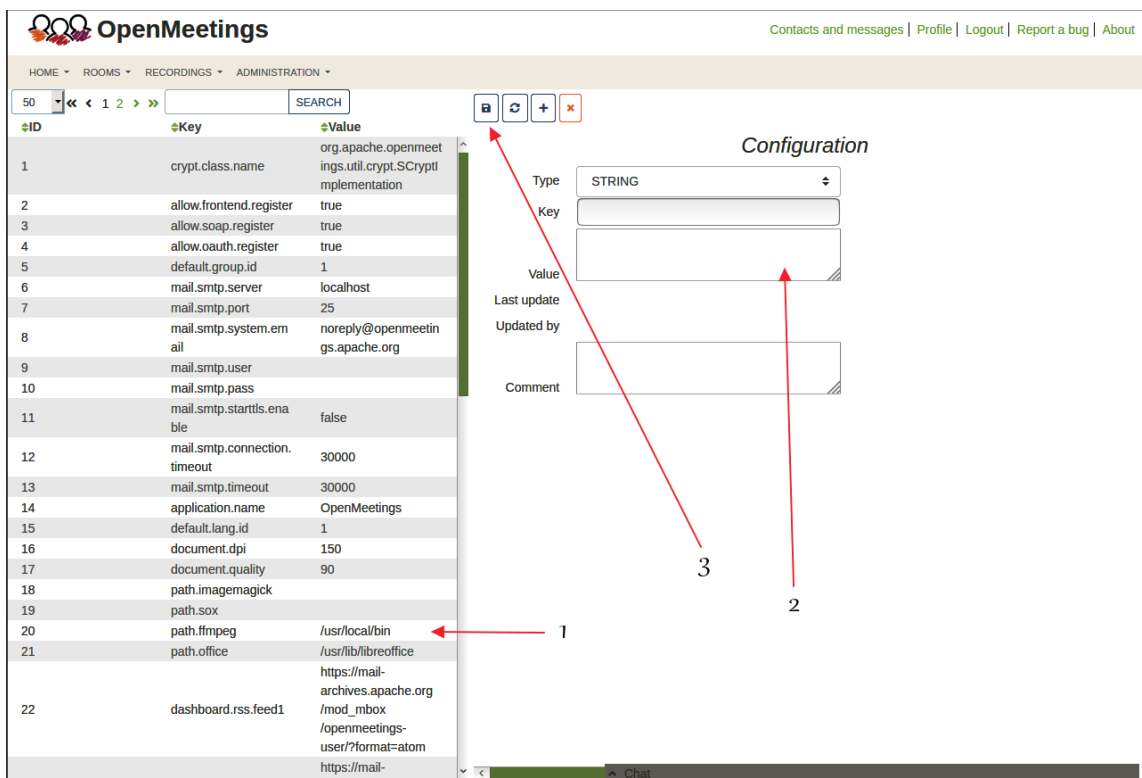
----- OpenMeetings's Configuration -----

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:



So to conclude, the commands remember to run the servers are (at this order):

sudo /etc/init.d/mariadb startMariaDB data server
sudo systemctl start docker.serviceDocker
sudo docker start kms	...Kurento Media Server
sudo /etc/init.d/coturn start	...Turn server (Coturn)
sudo /etc/init.d/tomcat34 startTomcat-OpenMeetings

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).