



Installation of Apache OpenMeetings 7.2.0 on Ubuntu 22.04 lts

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

ubuntu-mate-22.04-desktop-amd64.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-jre openjdk-17-jre-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 need it 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 add-apt-repository ppa:libreoffice/ppa
```

```
sudo apt update
```

```
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 and paquets:

```
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 two follow 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 the ImageMagick, or maybe you'll be asked to keep or replace the "policy.xml" file (modified by us), then pres "Keep" button.

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 curl
```

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 root password that you have just choosen, 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-OpenMeetings 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
```

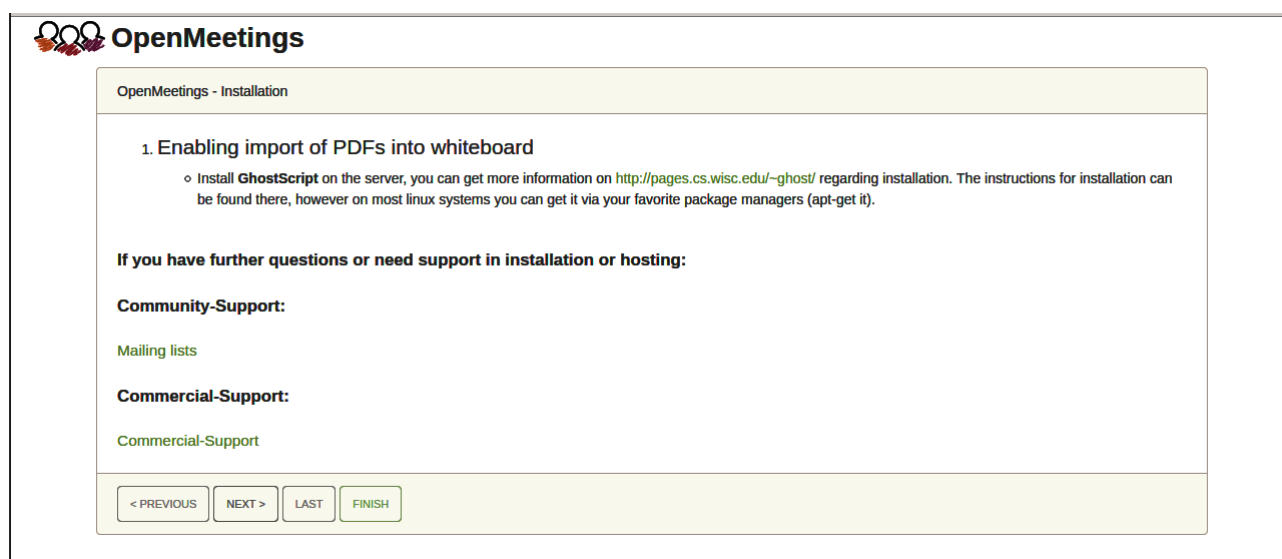
...and now start Tomcat-OpenMeetings:

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

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

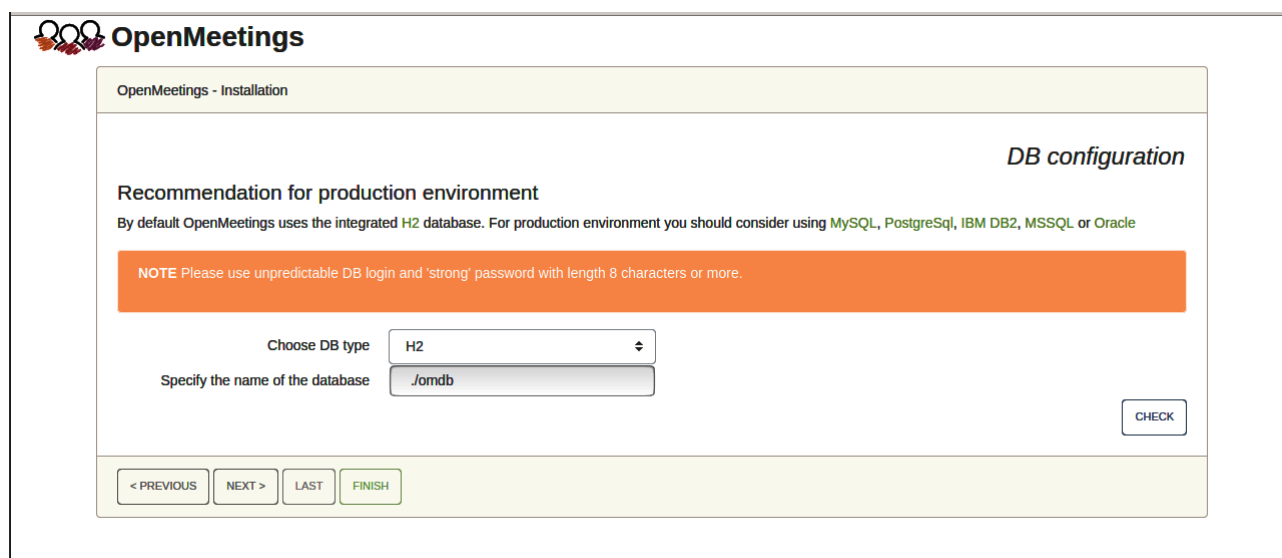
<https://localhost:5443/openmeetings>

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



The screenshot shows the OpenMeetings installation interface. At the top left is the OpenMeetings logo. The main heading is "OpenMeetings - Installation". Below this, the first step is "1. Enabling import of PDFs into whiteboard". A sub-point indicates that GhostScript should be installed on the server, with a link to <http://pages.cs.wisc.edu/~ghost/> for more information. Below the step, there are sections for "Community-Support" (with a link to "Mailing lists") and "Commercial-Support" (with a link to "Commercial-Support"). At the bottom of the page, there are four navigation 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 interface for the database configuration step. At the top left is the OpenMeetings logo. The main heading is "OpenMeetings - Installation". The sub-heading is "DB configuration". Below this, there is a "Recommendation for production environment" section, which states that OpenMeetings uses H2 by default but recommends MySQL, PostgreSQL, IBM DB2, MSSQL, or Oracle for production. A note in an orange box says: "NOTE Please use unpredictable DB login and 'strong' password with length 8 characters or more." Below the note, there are two input fields: "Choose DB type" with a dropdown menu set to "H2", and "Specify the name of the database" with a text input field containing ".jomdb". A "CHECK" button is located to the right of the input fields. At the bottom of the page, there are four navigation buttons: "< PREVIOUS", "NEXT >", "LAST", and "FINISH".

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

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

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-adress** ...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 Smtplib-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

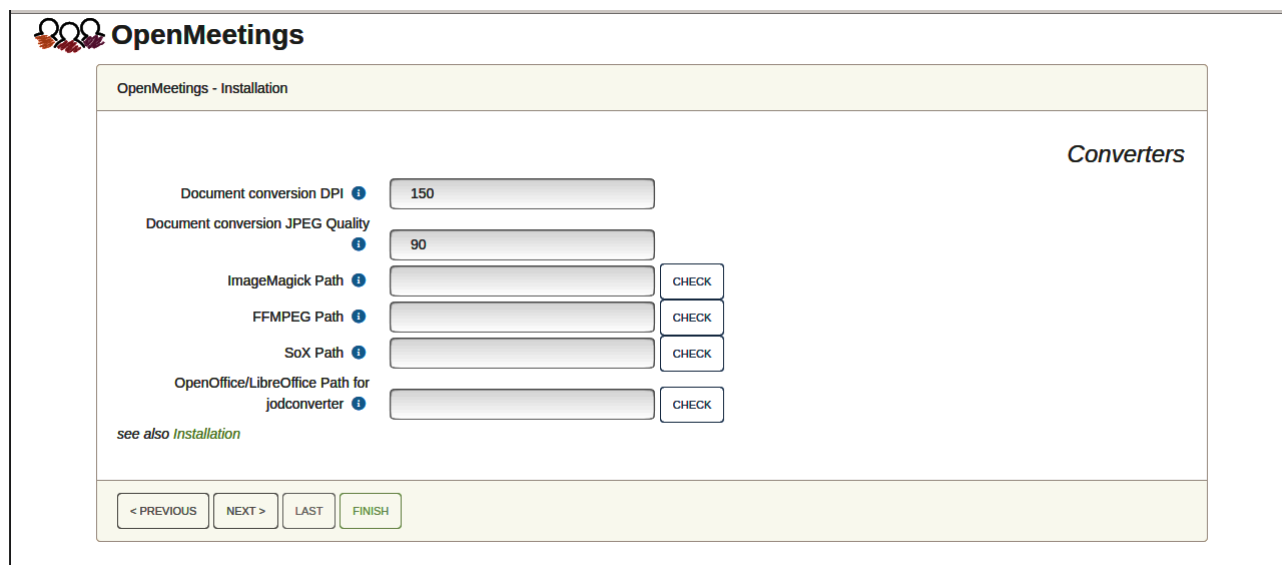
A valid example to configure the mail server with Gmail, is as follows:

(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 likes.

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



The screenshot shows the 'OpenMeetings - Installation' page, specifically the 'Converters' section. The page has a light green header with the OpenMeetings logo and title. Below the header, the 'Converters' section contains several configuration options, each with a text input field and a 'CHECK' button:

- Document conversion DPI: 150
- Document conversion JPEG Quality: 90
- ImageMagick Path: [empty] CHECK
- FFMPEG Path: [empty] CHECK
- SoX Path: [empty] CHECK
- OpenOffice/LibreOffice Path for jodconverter: [empty] CHECK

At the bottom left of the configuration area, there is a note: 'see also *Installation*'. At the bottom of the page, there are four navigation buttons: '< PREVIOUS', 'NEXT >', 'LAST', and '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](#)

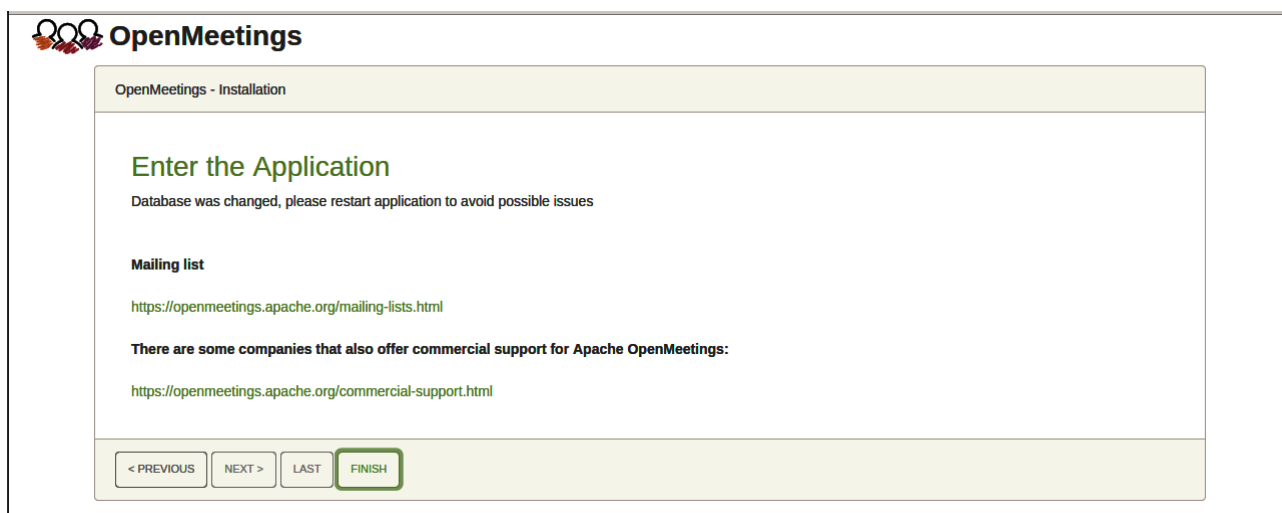
As you go introducing paths, you can check if they are correct by pressing the button labeled **Check**.

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

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

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:

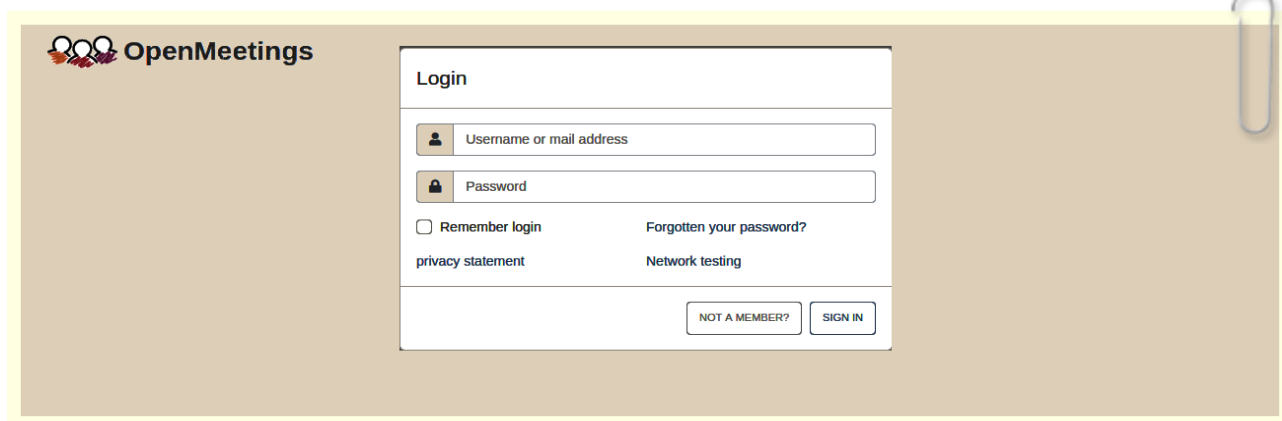
`sudo /etc/init.d/tomcat34 restart`



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 -----

Docker will be the container of Kurento-Media-Server, which we'll need for micro-audio, cam, recordings and share desktop.

Update the system:

```
sudo apt update
```

Install some needed packets:

```
sudo apt install apt-transport-https ca-certificates curl software-properties-common -y
.
```

..add the GPG key for the official Docker repo:

```
curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt-key add -
```

...and now add the repo to our APT:

(Only one line with space between both)

```
sudo add-apt-repository "deb [arch=amd64] https://download.docker.com/linux/ubuntu
$(lsb_release -cs) stable"
```

...update to take effect the changes:

```
sudo apt update
```

...and now to be sure Docker will be installed from the repo we've added, run this command:

```
apt-cache policy docker-ce
```

...must show something similar to this:

```
docker-ce:
```

```
Installed: (none)
```

```
Candidate: 5:19.03.9~3-0~ubuntu-focal
```

```
Version table:
```

```
5:19.03.9~3-0~ubuntu-focal 720
```

```
720 https://download.docker.com/linux/ubuntu focal/stable amd64 Packages
```

...and install Docker:

```
sudo apt install docker-ce -y
```

...we check that the installation was right and is running:

```
sudo systemctl status docker
```

...and will show something similar to this:

Output

```
? docker.service - Docker Application Container Engine
```

```
  Loaded: loaded (/lib/systemd/system/docker.service; enabled; vendor preset: enabled)
```

```
  Active: active (running) since Tue 2020-05-19 17:00:41 UTC; 17s ago
```

```
TriggeredBy: ? docker.socket
```

```
  Docs: https://docs.docker.com
```

```
 Main PID: 24321 (dockerd)
```

```
  Tasks: 8
```

```
 Memory: 46.4M
```

```
 CGroup: /system.slice/docker.service
```

```
  +-24321 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/containerd.sock
```

We add our user system and so can run Docker without be root:

```
sudo usermod -aG docker ${USER}
```

.Run docker, we'll employ the following command:

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

And with this we've finished the Docker installation.

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. 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 6.18.0:

(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-media-server, wich name is kms:

```
sudo docker start kms
```

12)

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

Ubuntu 22.04 have not at his repos Coturn (Turn server). Then we'll add Coturn repo:
(Turn server make the connections between OpenMeetings clients, peer to peer)

```
sudo add-apt-repository ppa:ubuntuhandbook1/coturn
```

```
sudo apt update
```

...and install it:

```
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. Created 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=751c45cae60a2839711a94c8d6bf0089e78b2149ca602fdXXXXXXXXXXXXXXXXXX`

(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: `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.

Restart Turn server: `sudo /etc/init.d/coturn restart`

Restart Kurento: `sudo docker restart kms`

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.

Click 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 which will work OpenMeetings. Here is:

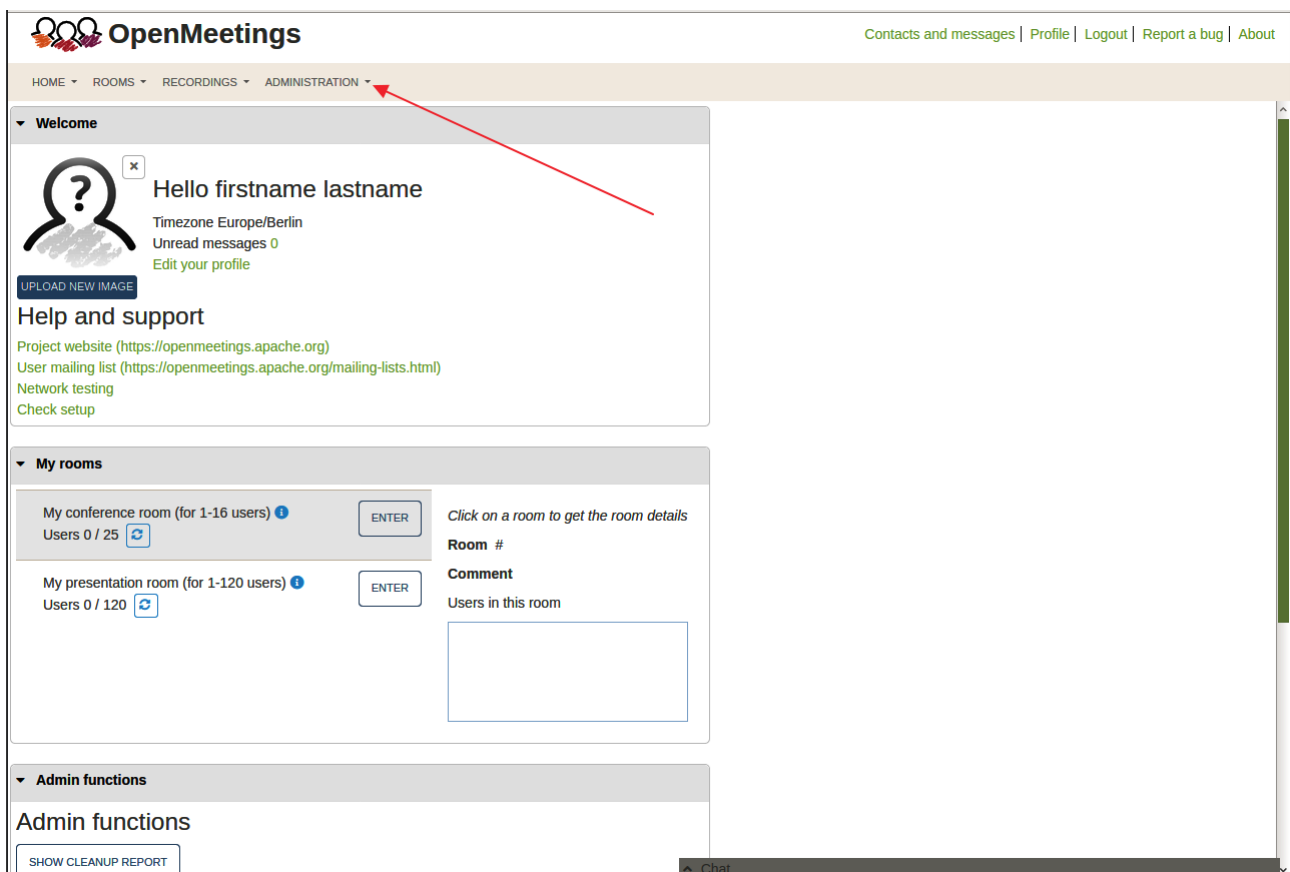
[Installation SSL certificates for OpenMeetings 7.2.0 on Ubuntu 22.04 LTS](#)

12)

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

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

Administration → Configuration



The screenshot shows the OpenMeetings web interface. At the top, there is a navigation bar with the OpenMeetings logo and the text "OpenMeetings". To the right of the logo, there are links for "Contacts and messages", "Profile", "Logout", "Report a bug", and "About". Below the navigation bar, there is a main menu with items: "HOME", "ROOMS", "RECORDINGS", and "ADMINISTRATION". A red arrow points to the "ADMINISTRATION" menu item. The main content area is divided into several sections: "Welcome" (with a user profile card showing "Hello firstname lastname", "Timezone Europe/Berlin", "Unread messages 0", and "Edit your profile"), "Help and support" (with links for "Project website", "User mailing list", "Network testing", and "Check setup"), "My rooms" (with two room cards: "My conference room (for 1-16 users)" and "My presentation room (for 1-120 users)"), and "Admin functions" (with a "SHOW CLEANUP REPORT" button). At the bottom right, there is a "Chat" button.

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

The screenshot shows the OpenMeetings Administration interface. On the left is a table of configuration items, and on the right is a 'Configuration' form. Three red arrows indicate the sequence of actions:

- Arrow 1 points from the 'path.office' row in the table to the 'Key' field in the form.
- Arrow 2 points from the 'path.office' row in the table to the 'Value' field in the form.
- Arrow 3 points from the 'path.office' row in the table to the 'Type' dropdown menu in the form.

ID	Key	Value
1	crypt.class.name	org.apache.openmeetings.util.crypt.SCryptImplementation
2	allow.frontend.register	true
3	allow.soap.register	true
4	allow.oauth.register	true
5	default.group.id	1
6	mail.smtp.server	localhost
7	mail.smtp.port	25
8	mail.smtp.system.email	noreply@openmeetings.apache.org
9	mail.smtp.user	
10	mail.smtp.pass	
11	mail.smtp.starttls.enable	false
12	mail.smtp.connection.timeout	30000
13	mail.smtp.timeout	30000
14	application.name	OpenMeetings
15	default.lang.id	1
16	document.dpi	150
17	document.quality	90
18	path.imagemagick	
19	path.sox	
20	path.ffmpeg	/usr/local/bin
21	path.office	/usr/lib/libreoffice-https://mail-archives.apache.org/mod_mbox/openmeetings-user/?format=atom
22	dashboard.rss.feed1	https://mail-

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

- `sudo /etc/init.d/mariadb start`MariaDB data server
- `sudo systemctl start docker.service` Docker
- `sudo docker start kms`Kurento Media Server
- `sudo /etc/init.d/coturn start`Turn server (Coturn)
- `sudo /etc/init.d/tomcat34 start` ...Tomcat-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, it is at your disposal.

Can find it here:

[Live iso download](#)

Thank you.

Alvaro Bustos (PMC and Committer at Apache OpenMeetings)

