EZcast
Installation guide

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1. INSTALLATION OF EZCAST

[EZMANAGER – EZADMIN – EZPLAYER]

1.1. THINGS TO KNOW BEFORE YOU START

All three applications are aimed to be installed on the same server. They interact between each other and, for that reason, need to share some files. This installation guide will explain how to install the three products. They can not be installed separately.

EZcast and its components require a Unix/Linux architecture to run. It will not work on Windows.

The video repository will require quite a large amount of storage space on your server (can also be on a NFS share). Count 1GB /hour for recording cam+slide (your mileage may vary).

1.1.1. SOME PREREQUISITES

Before installing the EZcast components, please make sure the following commands / programs / libraries are correctly installed on your server.

This will be tested in the first part of the installation script. In case you have an old version of the following programs, please update them to ensure a good compatibility with the EZcast components.

- Apache2
- mySQL
- Php5
  - [Php5_ldap]
  - php5_curl
  - php5_mysql
  - php5_apc
  - php5_simplexml
- [PhpMyAdmin]
- rsync, ssh

During the installation of EZcast, you will be requested to enter the path to the web space (DocumentRoot) and the Apache username. Make sure you know that information before you start the installation.
1.1.2. HOW TO PREPARE THE INSTALLATION?

Follow these steps to prepare your installation:

1. Make sure all prerequisites are respected.
2. Download EZcast from our Github repository.
3. Follow this guide for the installation.

1.1.3. QUICK INSTALL

If you do not feel comfortable with these instructions, please refer to the next part of this document («Detailed installation»)

1. Download the latest available version of EZcast from our Git repository

```
git clone https://github.com/ulbpodcast/ezcast.git
```

2. Create a MySQL database for EZcast on your server (grant all privileges on reading and writing).
3. Put the EZcast directory wherever you want on your server (we recommend to place it under «/usr/local/ezcast»)
4. Edit the php.ini file to increase upload_max_filesize, post_max_size, max_execution_time and max_input_time.
5. Launch the «install.sh» script as root from the EZcast directory and follow the instructions.
6. Open the EZadmin page in your web browser for the configuration of EZcast and all its components. This is a one-time operation.

```
i.e : http://my.server.address/ezadmin
```

7. Create the first renderer for EZcast in EZadmin web interface.

1.2. DETAILED INSTALLATION

1.2.1. STEP 1: DOWNLOAD THE SOURCE CODE

Open your terminal and call git in command line to download the source code of EZcast.

```
cd
git clone https://github.com/ulbpodcast/ezcast.git ./ezcast
```

The EZcast source code will be downloaded in current user’s home directory and placed in a folder named «ezcast».
1.2.2.STEP 2 : CREATE A MYSQL DATABASE

Open your terminal and call mysql in command line to create a user and the database for EZadmin.

The database will be used to store users and courses for the EZcast components. Make sure you have sufficient permissions to create a user and a database in MySQL. If you don’t, call your database administrator.

Please refer to the following example to configure your database. Variables between ‘< >’ are explained here below.

```
$ mysql -u <admin_user_name> -p
Enter password:
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 5340 to server version: 3.23.54

Type 'help;' or '\h' for help. Type '\c' to clear the buffer.

Mysql> CREATE USER '<ezcast_user_name>' IDENTIFIED BY '<ezcast_password'>;

mysql> CREATE DATABASE <database_name> CHARACTER SET utf8 COLLATE utf8_general_ci;
Query OK, 1 row affected (0.00 sec)

mysql> GRANT ALL PRIVILEGES ON <database_name>.* TO "<ezcast_user_name>"@"<host>" IDENTIFIED BY "<ezcast_password>";
Query OK, 0 rows affected (0.00 sec)

mysql> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.01 sec)

mysql> EXIT
Bye
```

In the above example:

- `<admin_user_name>` should be `root` or another high rank user
- `ezcast` or `ezadmin` are typical values for `<ezcast_user_name>`
- `ezcast` is a typical value for `<database_name>`
- `<host>` is usually `localhost`. If you do not know this value, consult your sysadmin.
- Feel free to chose a safe password for `<ezcast_user>`

Please keep in mind these values because you will be requested to enter them in a further step of the installation.
1.2.3. STEP 3 : MOVE THE EZCAST DIRECTORY

Now you have to decide where you want to install EZcast and its components. We recommend you to install it under «/usr/local/» directory.

Please follow these instructions.

cd
#change user to be root (alternatively, use ‘sudo bash’ depending on the distribution)
su
#following line creates the directories /usr/local/ if they don’t exist yet
mkdir -p /usr/local/
#moves the ezcast directory from current user’s home dir to /usr/local
#change the following path if you want to install ezcast somewhere else
mv ezcast /usr/local

Do not move the ezcast directory after the step 4 of this guide has been finalized. If you do it anyway, please change the path in the «config.inc» file of the «commons» subdirectory according to the new path of your ezcast directory.

1.2.4. STEP 4 : EDIT PHP.INI

Since EZmanager allows you to submit your own video files, it may come handy to increase the max file size for upload.

# this depends on your distribution
vi /etc/php5/apache2/php.ini
# change upload_max_filesize in the ‘File uploads’ section
upload_max_filesize = 2000M
post_max_size = 2000M
max_execution_time = 300
max_input_time = 300

1.2.5. STEP 5 : EXECUTE THE ‘INSTALL.SH’ SCRIPT FOR INSTALLING EZCAST

Go in the ezcast folder. Make sure the file ‘install.sh’ can be executed. Launch the ‘install.sh’ script as root and follow the instructions written on the screen.
The script will first verify that all prerequisites are correctly installed. If the test fails, please install the missing programs / commands / libraries and retry the installation.

Once the verification has been done, follow the instructions on the screen.

1.2.6. STEP 6: CONFIGURE EZCAST

You are now going to configure EZcast and its components. For this part of the installation, please open your favorite web browser.

Go to the EZadmin webpage. At the first visit, you will be requested to enter some information required by EZcast to run.

http://your.server.address/ezadmin

If you prefer to configure EZcast by editing the file manually, go to the EZcast folder. For each subdirectory (ezmanager / ezadmin / ezplayer / common), edit the ‘config-sample.inc’ file to match your configuration and rename it ‘config.inc’.

1.2.7. STEP 7: CREATE THE FIRST RENDERER

Prepare your renderer by installing all dependencies. Refer to EZRenderer's documentation to know what are the dependencies for EZRenderer.

Go to the EZadmin webpage and click on « Create renderer » in the menu on the left. Follow the instructions on the screen.

EZcast is now installed. Before using it, make sure EZrenderer is installed. It is required to process the submitted movies. EZrenderer can be installed on the same machine or on a remote machine.

You can also install EZrecorder which is the interface used to record in the classroom. (See EZrecorder's documentation).

Once EZRenderer has been installed, you can use the different interfaces using the following URL's.
http://your.server.address/ezadmin
http://your.server.address/ezmanager
http://your.server.address/ezplayer
2. INSTALLATION OF EZRENDERER

2.1. THINGS TO KNOW BEFORE YOU START

The renderer is designed to be installed on a remote server and interact with EZcast server through ssh. It can be installed on the same server as the other EZcast products, but it will still require ssh to communicate with EZmanager.

This installation guide will explain how to install EZrenderer.

EZrenderer requires a Unix/Linux architecture to run. It will not work on Windows.

2.1.1. SOME PREREQUISITES

Before installing EZrenderer, please make sure the following commands / programs / libraries are correctly installed on your server.

This will be tested in the first part of the installation script. In case you have an old version of the following programs, please update them to ensure a good compatibility with EZrenderer.

- Php5
  - php5_simplexml
  - lib_gd (with lib_freetype enabled)
- ssh
- Ffprobe
- Ffmpeg (with libx264 & libfdk_acc codecs)

2.1.2. HOW TO PREPARE THE INSTALLATION?

Follow these steps to prepare your installation:

1. Make sure all prerequisites are respected.
2. Download EZcast from our Github repository. (ulbpodcast)
3. Follow this guide for the installation.
2.2. QUICK INSTALL

If you do not feel comfortable with these instructions, please refer to the next part of this document (« Detailed installation »)

2.2.1. WEB INSTALLATION

1. Go to EZadmin webpage and click on « Create renderer » in the menu on the left.
2. Follow instructions on the screen, that's it!

2.2.2. MANUAL INSTALLATION (PREFERE WEB INSTALLATION …)

1. Download the latest available version of EZrenderer from our Git repository

   git clone https://github.com/ulbpodcast/ezcast.git

2. Put the EZrenderer directory wherever you want on your server (we recommend to place it under « ~/ »)
3. Launch the « install.sh » script as root from the EZrenderer directory and follow the instructions.
4. Configure the SSH link between EZmanager (EZcast server) and EZrenderer.
5. Add the renderer to EZmanager and EZadmin.

2.3. DETAILED INSTALLATION

We recommend you to use the web installer! (see “Quick install”)

2.3.1. STEP 1: DOWNLOAD THE SOURCE CODE

Open your terminal and call Git in command line to download the source code of EZrenderer.

   cd
   git clone https://github.com/ulbpodcast/ezcast.git ./ezcast

The EZrenderer source code will be downloaded in current user’s home directory and placed in a folder named « ezcast/ezrenderer ».

2.3.2. STEP 2: MOVE THE EZRENDERER DIRECTORY

Now you have to decide where you want to install EZrenderer. We recommend you to install it under « ~/ » directory (current user’s home).
Do not move the ezrenderer directory after the step 3 of this guide has been finalized. If you do it anyway, please change the path in the «config.inc» file of the «bin» subdirectory according to the new path of your ezrenderer directory. Do not forget to update the «renderers.inc» files in EZmanager and EZadmin, according to the new path of your ezrenderer directory.

2.3.3. STEP 3 : EXECUTE THE ‘INSTALL.SH’ SCRIPT FOR INSTALLING EZRENDERER

Go in the EZrenderer folder. Make sure the file ‘install.sh’ can be executed. Launch the ‘install.sh’ script as root and follow the instructions written on the screen.

```bash
# change user to be root (alternatively, use ‘sudo bash’ depending on the distribution)
su
# move to the ezrenderer directory (change the path if you have installed ezcast somewhere else)
.cd ~/ezrenderer
# change permissions for install.sh
.chmod 755 install.sh
# execute install.sh
./install.sh
```

The script will first verify that all prerequisites are correctly installed. If the test fails, please install the missing programs / commands / libraries and retry the installation.

Once the verification has been done, follow the instructions on the screen.

2.3.4. STEP 4 : CONFIGURE THE SSH LINK

You are now going to configure the SSH link between EZmanager and EZrenderder. For this part of the installation, you will need an access to EZcast server.

On the remote (or local) EZcast server, generate a SSH key and write it down.

```bash
.ssh-keygen -t dsa
# copy public key (dsa.pub)
```

On the local EZrenderder server, generate a SSH key and add the public key from EZmanager in the authorized keys of EZrenderder.

```bash
.cd
.ssh-keygen -t dsa
.cd .ssh
.vi authorized_keys # may be authorized_keys2
# paste the EZmanager public key in authorized_keys
```
2.3.5. STEP 5: ADD THE RENDERER TO EZMANAGER AND EZADMIN

On the remote EZcast server, edit the 'renderers.inc' file in ezmanager and ezadmin folders, according to your own configuration.

```php
<?php
  // Renderers.inc
  // Configuration file

  return array(
    array(
      'name' => 'name of the renderer',
      'host' => 'localhost',
      'client' => 'user name',
      'status' => 'activate',
      'downloading_dir' => '/path/to/downloading',
      // typically ~/ezrenderer/queues/downloading
      'downloaded_dir' => '/path/to/downloaded',
      // typically ~/ezrenderer/queues/downloaded
      'processed_dir' => '/path/to/processed',
      // typically ~/ezrenderer/queues/processed
      'statistics' => '/path/to/bin/cli_statistics_get.php',
      // typically ~/ezrenderer/bin/cli_statistics_get.php
      'php' => '/usr/bin/php',
      'launch' => '/path/to/bin/intro_title_movie.bash',
      // typically ~/ezrenderer/bin/intro_title_movie.bash
      'kill' => '/path/to/bin/cli_job_kill.php',
      // typically ~/ezrenderer/bin/cli_job_kill.php
    ),
  );
?>
```

Now that EZrenderer and EZcast are both installed, you should be able to use EZcast to submit and manage your videos.
3. INSTALLATION OF EZRECORDE

3.1. THINGS TO KNOW BEFORE YOU START

The recorder is designed to be installed on a remote Mac mini and interact with EZcast server through ssh.

This installation guide will explain how to install EZrecorder.

EZrecorder requires a Unix/Linux architecture to run. It will not work on Windows. Some modules of the recorder are only available for Mac OS X.

The recorder uses various modules to do its tasks. It is up to you to enable or disable the modules you need.

3.1.1. SOME PREREQUISITES

Before installing EZrecorder, please make sure the following commands / programs / libraries are correctly installed on your recorder.

This will be tested in the first part of the installation script. In case you have an old version of the following programs, please update them to ensure a good compatibility with EZrecorder.

- Apache
  - Php5
  - php5_simplexml
- lib_curl
- ssh, at
- Ffmpeg

3.1.2. HOW TO PREPARE THE INSTALLATION?

Follow these steps to prepare your installation:

- Make sure all prerequisites are respected.
- Download EZrecorder from our Github repository (ulbpodcast).
- Follow this guide for the installation.
3.2. QUICK INSTALL

If you do not feel comfortable with these instruction, please refer to the next part of this document (« Detailed installation »)

1. Download the latest available version of EZrecorder from our Git repository
   
   ```
   git clone https://github.com/ulbpodcast/ezrecorder.git ./ezrecorder
   ```

2. Put the EZrecorder directory wherever you want on your server (we recommend to place it under « /Library/ezrecorder »)

3. Launch the « install.sh » script as root from the EZrecorder directory and follow the instructions on the screen.

4. Configure the SSH link between EZmanager (EZcast server) and EZrecorder.

5. Edit the « commons/config.inc » file on the remote EZcast server to match your own configuration.

6. Configure the recorder depending on your needs (Wifi sharing, patch for Wifi, ...). See the detailed installation for further information.

7. Add the recorder to EZadmin.

3.3. DETAILED INSTALLATION

3.3.1. STEP 1: DOWNLOAD THE SOURCE CODE

Open your terminal and call Git in command line to download the source code of EZrecorder.

   ```
   cd
   git clone https://github.com/ulbpodcast/ezrecorder.git
   ```

The EZrecorder source code will be downloaded in current user’s home directory and placed in a folder named « ezrecorder ».

3.3.2. STEP 2: MOVE THE EZRECORDE DIRECTORY

Now you have to decide where you want to install EZrecorder. We recommend you to install it under « /Library/ezrecorder » directory.
Please follow these instructions.

```
cd
#change user to be root (may be ‘sudo’ depending on the distribution)
su
#moves the ezrecorder directory from current user’s home dir to /Library
#change the following path if you want to install ezrecorder somewhere else
mv ezrecorder /Library
```

Do not move the ezrecorder directory after the step 3 of this guide has been finalized. If you do it anyway, please change the path in the «global_config.inc» file of the «ezrecorder» directory according to the new path. Do not forget to update the «config.inc» files in commons directory of EZcast, according to the new path of your ezrecorder directory (see 5).

### 3.3.3. STEP 3 : EXECUTE THE ‘INSTALL.SH’ SCRIPT FOR INSTALLING EZRECORDER

Go in the EZrenderer folder. Make sure the file ‘install.sh’ can be executed. Launch the ‘install.sh’ script as root and follow the instructions written on the screen.

```
#change user to be root (may be ‘sudo’ depending on the distribution)
su
#move to the ezrecorder directory (change the path if you have installed ezrecorder somewhere else)
  cd /Library/ezrecorder
#change permissions for install.sh
  chmod 755 install.sh
#execute install.sh
  ./install.sh
```

The script will first verify that all prerequisites are correctly installed. If the test fails, please install the missing programs / commands / libraries and retry the installation.

Once the verification has been done, follow the instructions on the screen.

### 3.3.4. STEP 4 : CONFIGURE THE SSH LINK

You are now going to configure the SSH link between EZmanager and EZrecorder. For this part of the installation, you will need an access to EZcast server.

On the remote EZcast server, copy the public SSH key.
On EZrecorder, generate a SSH key and add the public key from EZmanager in the authorized keys of EZrecorder.

```
cd  # generate a key pair
ssh-keygen -t dsa

cd .ssh
vi authorized_keys  # may be authorized_keys2
# paste the EZmanager public key in authorized_keys
```

3.3.5. STEP 5: EDIT « COMMONS/CONFIG.INC » FILE OF EZCAST

On the remote EZcast server, edit the ‘config.inc’ file in the ‘commons’ subdirectory.

```
<?php
...
[line 45]
// Paths for the remote recorder
$recorder_user = "podclient";
// Path from the root to the recorder
$recorder_basedir = '/Library/ezrecorder/';
// Path from basedir to the admin.inc file
$recorder_subdir = '/etc/users/';
// Path from the root to the recorder local repository
$recorder_recorddir = "~$recorder_user/";
?>
```

3.3.6. STEP 6: CONFIGURE THE RECORDER

3.3.6.1. CONFIGURE APACHE FOR HTACCESS OVERRIDE

```
Sudo vi /etc/apache2/httpd.conf
# set AllowOverride All for <Directory/Library/WebServer/Documents>
# uncomment #LoadModule php5_module libexec/apache2/libphp5.so
sudo apachectl graceful
```

Note: On Mac OS 10.8 and above, the apache server is not activated by default. Execute the following command to activate it.

```
Sudo launchctl load -w /System/Library/LaunchDaemons/org.apache.httpd.plist
```
3.3.6.2. ACTIVATE REMOTE CONTROL

It can be useful to enable remote control for managing the recorder remotely.

Go in ‘System preferences’ > ‘Sharing’ and activate ‘Remote login’ and ‘Remote management’.

3.3.6.3. ACTIVATE INTERNET SHARING

Depending on your needs, you may have to use Internet Sharing to provide an access to the recorder.

Go in ‘System preferences’ > ‘Sharing’ and activate ‘Web Sharing’ and ‘Internet Sharing’.

Note: Since Mac OS 10.8, we have encountered many Wifi problems. Sometimes, the Internet sharing is enabled but the Mac doesn’t share its Wifi. Sometimes, the connection delay expires and a timeout occurs.

Activate the script that checks every minute if the Internet sharing is still enabled and functional:

```
# enable 'Access for assistive devices' in 'System Preferences' > 'Accessibility'
# copy ./sbin/be.ac.ulb.websharingfix.plist (from ezrecorder basedir) in /Library/LaunchAgents/ to be loaded at reboot
sudo cp ./sbin/be.ac.ulb.websharingfix.plist /Library/LaunchAgents/.
# load websharingfix agent
sudo launchctl load -w /Library/LaunchAgents/be.ac.ulb.websharingfix.plist
```

You might have to edit ‘sbin/websharingfix.scpt’ (using AppleScript Editor) following the hardware or OS X distribution you use. On line 15, ‘row 9’ is referring to the position of ‘Internet Sharing’ in the ‘System Preferences’ > ‘Sharing’ panel.

Activate the script that checks every 10 minutes that Internet sharing is not in timeout (only possible if there is a second Mac mini with the recorder)

```
sudo cp ./sbin/be.ac.ulb.checkinternetsharing.plist /Library/LaunchAgents/.
# load checkinternetsharing agent
sudo launchctl load -w /Library/LaunchAgents/be.ac.ulb.checkinternetsharing.plist
```
3.3.6.4. ACTIVATE ‘MAIL’

The ‘mail’ command line is not activated by default on Mac OS X. Here is how to activate it.

```
sudo vi /etc/postfix/main.cf
# add ‘myorigin = ip address’
# add ‘relayhost = smtp server’
sudo postfix start
# if an error occurs : sudo postfix reload
sudo vi /System/Library/LaunchDaemons/org.postfix.master.plist
# add
<key>RunAtLoad</key>
<true/>
```

3.3.6.5. DISABLE THE SCREENSAVER AND ENERGY SAVER

Go in ‘System Preferences’ > ‘Energy Saver’ and set ‘Computer sleep’ and ‘Display sleep’ to never.

You might also want to schedule a daily or weekly reboot.

3.3.7. STEP 7: ADD THE RECORDER TO EZADMIN

Now that your recorder is ready to work, just add it to EZadmin via the web interface and save the modification for it to be recognized by EZmanager. You may have to enable the classroom management for EZadmin in the web interface of EZadmin (left menu > configure > enable management for classroom).

You can now use your recorder to record in classrooms.