

# SmartLightHub

A OPENSOURCE SMART DMX-LIGHTCONTROL

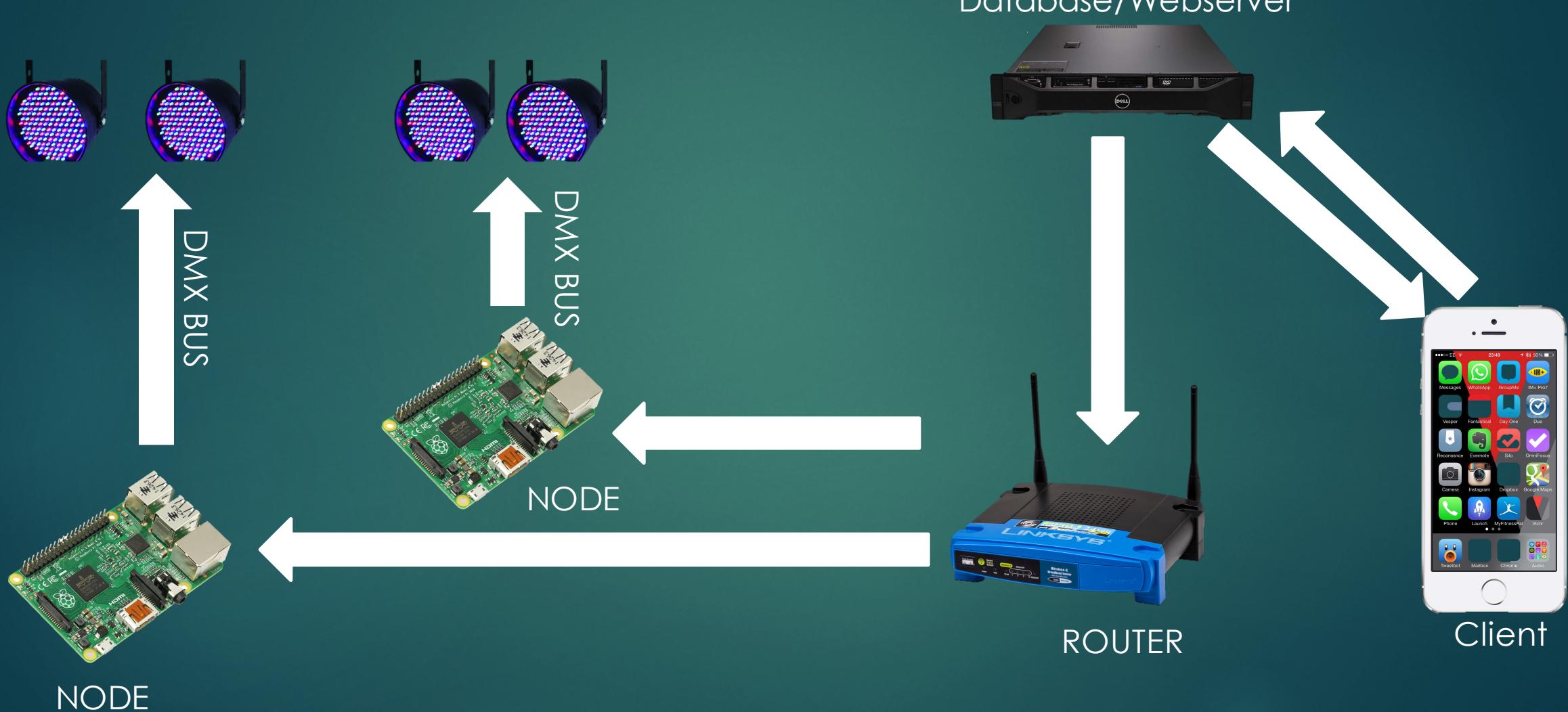
# CONTENT

- ▶ ABOUT THIS PROJECT
- ▶ HARDWARE
- ▶ SOFTWARE
- ▶ WEBINTERFACE
- ▶ LINKS

# About this project

- ▶ Desc

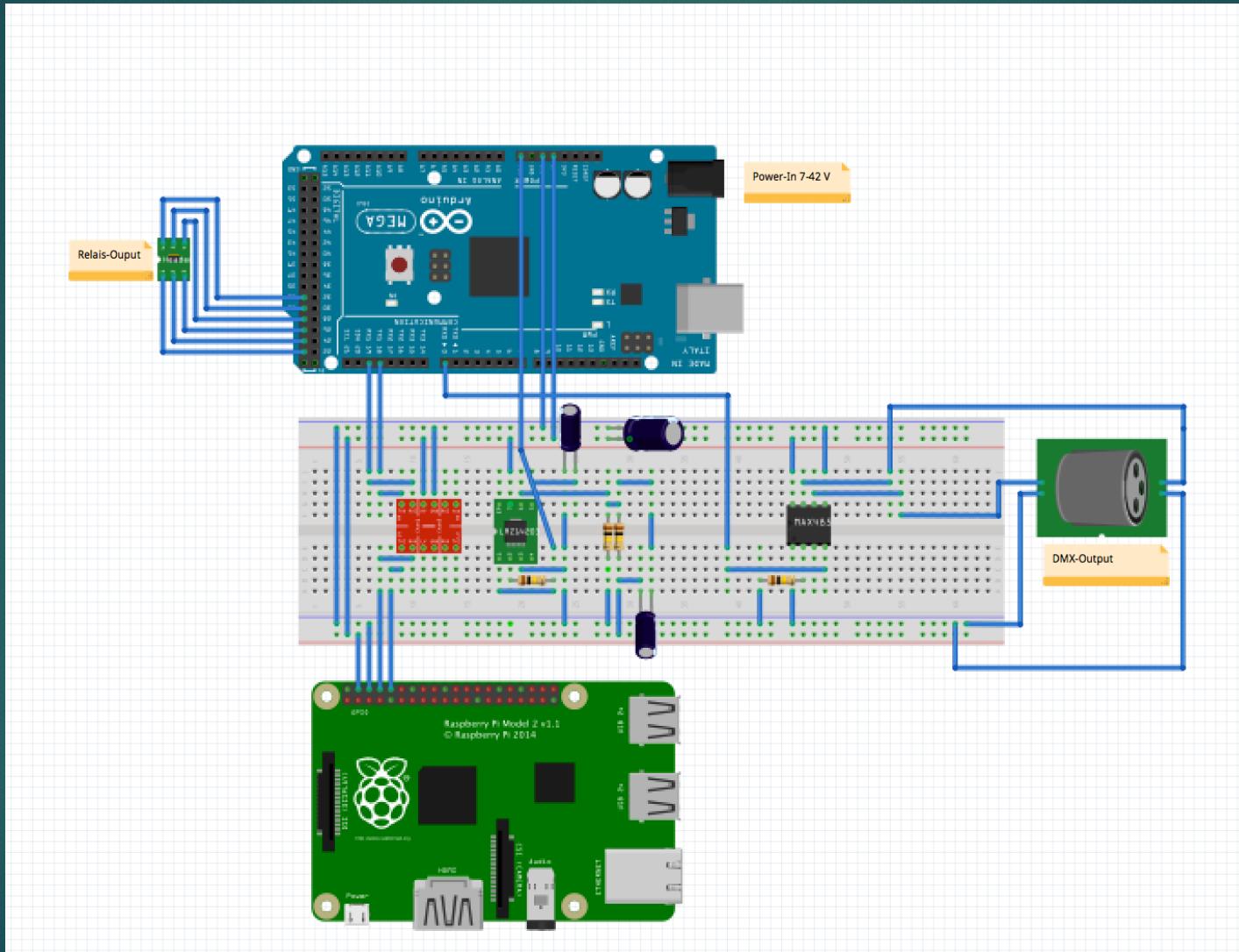
# Setup (External Access)



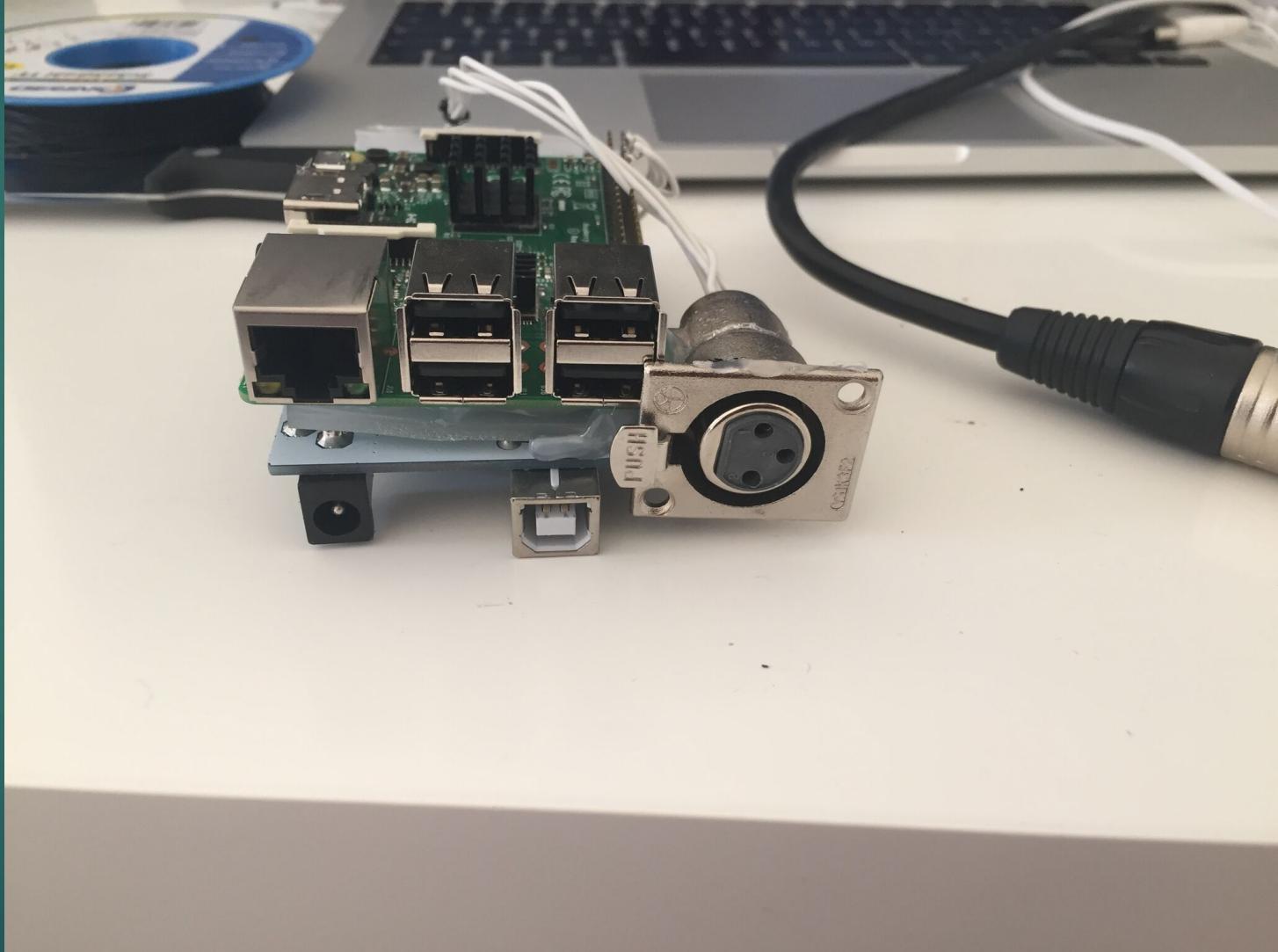
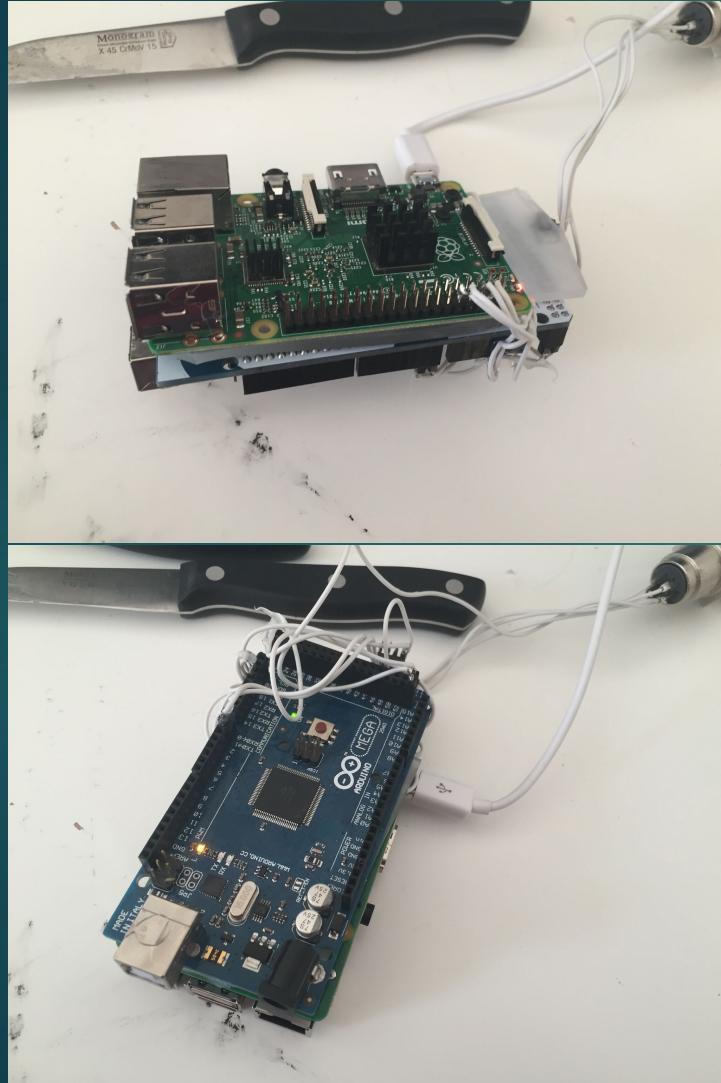
# HARDWARE [Node V2.1]

- ▶ To run the SmartLightHub you will need:
  - a) Webserver with PHP (Socket support) and MySQL-Database
  - b) PC/Embedded-Board that can run Python and have a TTL-UART
  - c) Arduino ([recommended a Arduino Mega 2560, + some wires and ics](#))

# Hardware-Schematic [Node V2.1]



# The Hardware-Package [Node V2.1]



# The Hardware-Package [Node V2.1]

- ▶ Plug and Play
- ▶ Raspberry Pi v2 or B/B+
- ▶ Arduino Meag 2560 ( + DMX Socket, Transreciever-IC, voltage-regulator, level-regulator)
- ▶ SD Card with complete and ready to use image
- ▶ Electric cabinet compatible case
- ▶ 4x 230V 16A Relais
- ▶ 12V Power Supply (Electric cabinet compatible)

# RaspberryPi 2 Image

- ▶ Ready to Use
- ▶ Fast webserver with PHP,FTP, Database, Cronjob
- ▶ MySQL-Database with preloaded tables
- ▶ Complete pre-configured webinterface
- ▶ Installed pythonscripts to recieve the control requests

# WEBINTERFACE

- ▶ OVERVIEW
- ▶ ZONES
- ▶ DEVICES
- ▶ CHANNELS
- ▶ SCENES
- ▶ TASKS

# SmartLightHub

## - Backend -

Start

Dashboard

Channel Management

Device Management

Zone Management

Node Management

Scene Management

Schedule Management

Activity Log

SETUP

## SCENES

[Alle aus](#)

[Alle an](#)

[Tageslicht](#)

[Nachtlicht](#)

[YELLOW](#)

## ZONES



[Schlafzimmer](#)

# RBNetworks

## SMART

## LIGHT V2

- Backend -

Start

Dashboard

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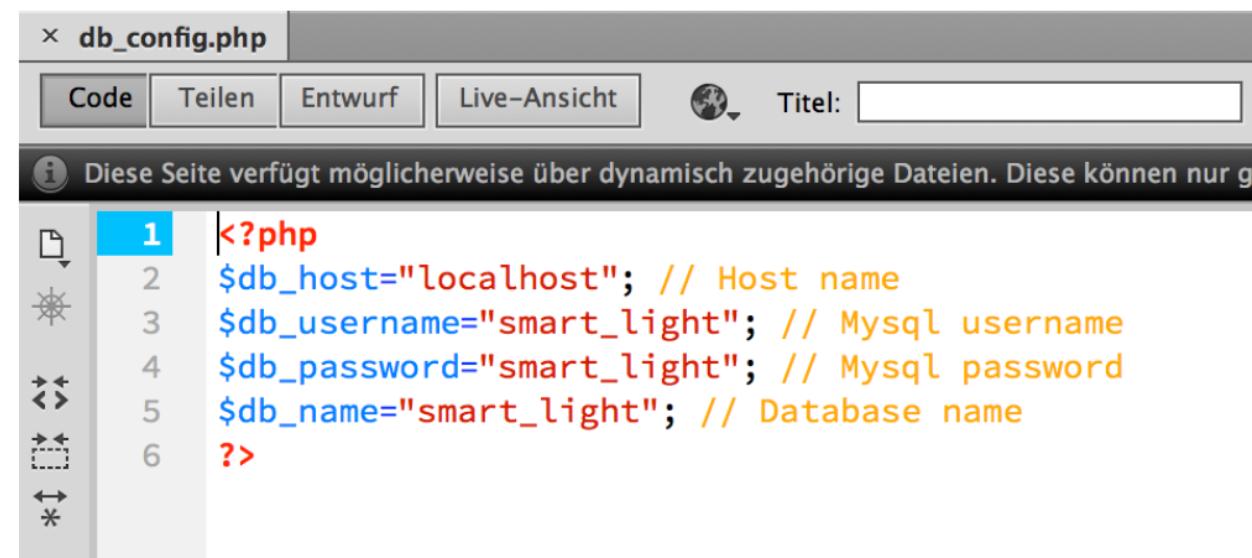
### SETUP Cronjob

The file **(root\_dir)/remote/cron.php** must be called every minute.

Exaple-Config for the linux crontab : \* \* \* \* \* /var/www/smarthome\_v2/remote/cron.php  
But firt make the cron.php exicutable : **chmod +x /var/www/smarthome\_v2/remote/cron.php**

### ADVANCED CONFIG

#### SETUP Database : setup (the root\_dir)/db\_config.php first



A screenshot of a code editor window titled "db\_config.php". The window has tabs for "Code", "Teilen", "Entwurf", and "Live-Ansicht". There is also a title input field and a save icon. The code area contains the following PHP configuration:

```
<?php
$db_host="localhost"; // Host name
$db_username="smart_light"; // Mysql username
$db_password="smart_light"; // Mysql password
$db_name="smart_light"; // Database name
?>
```

#### SETUP Database : Load data to Database. Create a table with the name "smarthome" first

[Setup Database with SAMPLE DATA](#)

# SmartLightHub

## - Backend -

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Activity Log

SETUP

SCHEDULE NAME	TOGGLE TIME	SCENE TO TOGGLE	ACTIVE DAYS	DELETE	EN.
AUS	02:00	Alle aus	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday	<button>DELETE SCHEDULE</button>	DIS.
AUS	07:00	Alle aus	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday	<button>DELETE SCHEDULE</button>	DIS.
Nachtlicht	00:00	Nachtlicht	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday	<button>DELETE SCHEDULE</button>	DIS.
Tageslicht	23:30	Tageslicht	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday	<button>DELETE SCHEDULE</button>	DIS.
Tageslicht	23:00	Tageslicht 1	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday	<button>DELETE SCHEDULE</button>	DIS.
Tageslicht	22:30	Tageslicht 2	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday	<button>DELETE SCHEDULE</button>	DIS.
Tageslicht	22:00	Tageslicht 3	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday	<button>DELETE SCHEDULE</button>	DIS.
Tageslicht	21:30	Tageslicht	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday	<button>DELETE SCHEDULE</button>	DIS.
Tageslicht	21:00	Tageslicht 1	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday	<button>DELETE SCHEDULE</button>	DIS.
Tageslicht	20:30	Tageslicht 2	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday	<button>DELETE SCHEDULE</button>	DIS.
Tageslicht	20:00	Tageslicht 3	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday	<button>DELETE SCHEDULE</button>	DIS.
Tageslicht	19:30	Tageslicht	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday	<button>DELETE SCHEDULE</button>	DIS.
Tageslicht	19:00	Tageslicht 1	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday	<button>DELETE SCHEDULE</button>	DIS.
SUN	06:00	YELLOW	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday,	<button>DELETE SCHEDULE</button>	DIS.

Channel-Name

Scene to Toggle

TIME SETTINGS

Toggle Time [FORMAT : HH:MM eg. 09:00 24Hr]

MONDAY

TUESDAY



# SmartLightHub

## - Backend -

Start

Dashboard

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Zone Management

Node Management

Scene Management

Schedule Management

Activity Log

SETUP

Scene Name	INFO	DELETE	CAPTURE	TOGGLE SCENE
Alle aus	IS A HOMEKIT DEVICE : 1	DELETE SCENE	CAPTURE VALUES TO SCENE	TOGGLE SCENE
Alle an	IS A HOMEKIT DEVICE : 1	DELETE SCENE	CAPTURE VALUES TO SCENE	TOGGLE SCENE
Tageslicht	IS A HOMEKIT DEVICE : 1	DELETE SCENE	CAPTURE VALUES TO SCENE	TOGGLE SCENE
Nachtlicht	IS A HOMEKIT DEVICE : 1	DELETE SCENE	CAPTURE VALUES TO SCENE	TOGGLE SCENE
Tageslicht 1	IS A HOMEKIT DEVICE : 1	DELETE SCENE	CAPTURE VALUES TO SCENE	TOGGLE SCENE
Tageslicht 2	IS A HOMEKIT DEVICE : 1	DELETE SCENE	CAPTURE VALUES TO SCENE	TOGGLE SCENE
Tageslicht 3	IS A HOMEKIT DEVICE : 1	DELETE SCENE	CAPTURE VALUES TO SCENE	TOGGLE SCENE
YELLOW	IS A HOMEKIT DEVICE : 1	DELETE SCENE	CAPTURE VALUES TO SCENE	TOGGLE SCENE

**Add Scene**

---

Scene-Name	<input type="text" value="SCENE NAME"/>
Show in Sidebar	<input checked="" type="checkbox"/>
ADVANCED SETTINGS	
Add as HomeKit-Device	<input checked="" type="checkbox"/>
<b>ADD SCENE</b>	

# SmartLightHub

## - Backend -

Start

Dashboard

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Activity Log

SETUP

Node-Name	IP	Set State	Delete
RPI	rbnetworks.dyndns.ws:5000 PW:0000	<b>DISABLE NODE</b>	<b>DELETE NODE</b>
local node	127.0.0.1:5000 PW:0000	<b>ENABLE NODE</b>	<b>DELETE NODE</b>

---

Node-Name	<input type="text" value="NODE NAME"/>
IP (IPv4)	<input type="text" value="NODE IP"/>
Port	<input type="text" value="5000"/> <input type="button" value=""/>
NODE PASSWORD	<input type="text" value="PASSWORD"/>
<input type="button" value="ADD NODE"/>	

# SmartLightHub

## - Backend -

Start

Dashboard

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Activity Log

SETUP

**DELETE LOG**

- 1) Time : 2015-07-22 00:09:19 -> Toggle Scene: 6 BY USER
- 2) Time : 2015-07-22 00:09:24 -> Toggle Scene: 6 BY USER
- 3) Time : 2015-07-22 00:09:28 -> Toggle Scene: 2 BY USER
- 4) Time : 2015-07-22 00:09:31 -> Toggle Scene: 5 BY USER
- 5) Time : 2015-07-22 00:09:34 -> Toggle Scene: 5 BY USER
- 6) Time : 2015-07-22 00:09:36 -> Toggle Scene: 13 BY USER
- 7) Time : 2015-07-22 00:09:46 -> Toggle Scene: 8 BY USER
- 8) Time : 2015-07-22 00:31:29 -> Toggle Scene: 2 BY USER
- 9) Time : 2015-07-22 00:31:36 -> Toggle Scene: 5 BY USER
- 10) Time : 2015-07-22 00:31:38 -> Toggle Scene: 2 BY USER
- 11) Time : 2015-07-22 00:34:10 -> Toggle Scene: 9 BY USER
- 12) Time : 2015-07-22 01:03:05 -> Toggle Scene: 2 BY USER
- 13) Time : 2015-07-22 01:03:10 -> Toggle Scene: 7 BY USER
- 14) Time : 2015-07-24 00:00:21 -> Toggle Scene: 2 BY USER
- 15) Time : 2015-07-24 00:00:26 -> Toggle Scene: 5 BY USER
- 16) Time : 2015-07-24 00:15:28 -> Toggle Scene: 8 BY USER
- 17) Time : 2015-07-24 00:15:39 -> Toggle Scene: 8 BY USER
- 18) Time : 2015-07-24 00:15:42 -> Toggle Scene: 8 BY USER
- 19) Time : 2015-07-24 00:15:53 -> Toggle Scene: 6 BY USER
- 20) Time : 2015-07-24 00:16:04 -> Toggle Scene: 6 BY USER
- 21) Time : 2015-07-24 00:40:35 -> Toggle Scene: 7 BY USER
- 22) Time : 2015-07-25 00:00:20 -> Toggle Scene: 13 BY USER
- 23) Time : 2015-07-25 00:53:39 -> Toggle Scene: 7 BY USER
- 24) Time : 2015-07-25 22:43:54 -> Toggle Scene: 5 BY USER

# SmartLightHub

## - Backend -

Zurueck / Dashboard

Add Device

Edit Device

Delete Device

### Edit Device

DEVICE TO EDIT

NEW DEVICE NAME

NEW ZONE

NEW ICON

# SmartLightHub

## - Backend -

Start

Dashboard

Channel Management

Device Management

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Scene Management

Schedule Management

Activity Log

SETUP

 Bettbeleuchtung  
(unten)

RED

GREEN

BLUE

FADE SPEED

 Bettbeleuchtung  
(hinten)

RED

GREEN

BLUE

FADE SPEED

# SmartLightHub

## - Backend -

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Activity Log

SETUP

### Add Channel

SELECT DEVICE **Schlafzimmer -> Bettbeleuchtung (unten)**

Channel-Name	Channel	INFO	DELETE
RED	1	Value:0 Min:0 Max: 255 Is switch: 0	<b>DELETE CHANNEL</b>
GREEN	2	Value:255 Min:0 Max: 255 Is switch: 0	<b>DELETE CHANNEL</b>
BLUE	3	Value:255 Min:0 Max: 255 Is switch: 0	<b>DELETE CHANNEL</b>
FADE SPEED	4	Value:255 Min:1 Max: 255 Is switch: 0	<b>DELETE CHANNEL</b>

Channel-Name

Channel (DMX CHANNEL)

Channel-Icon

Is a switch ?

ADVANCED SETTINGS

Channel-Min-Value

Channel-Max-Value

**ADD CHANNEL**

# SmartLightHub

## - Backend -

Zurueck / Dashboard

Add Device

Edit Device

Delete Device

### Add Device

DEVICE NAME

ZONE

ICON

**Senden**

# OVERVIEW

Start	Quick selection of Scenes and Zones
Dashboard	Select Zones and Devices
Channel Management	Add/Edit/Delete DMX Channels
Device Management	Add/Edit/Delete Devices
Zone Management	Add/Edit/Delete Zones
Node Management	Add/Delte data recieving devices
Scene Management	Setup Scenes
Schedule Management	Manage Tasks
Activity Log	Show System Log
SETUP	Setup/Restore Settings

## SmartLightHub

- Backend -

Start

Dashboard

Channel Management

Device Management

Zone Management

Node Management

Scene Management

Schedule Management

Activity Log

SETUP

## SCENES

[Alle aus](#)

[Alle an](#)

[Tageslicht](#)

[Nachtlicht](#)

[YELLOW](#)

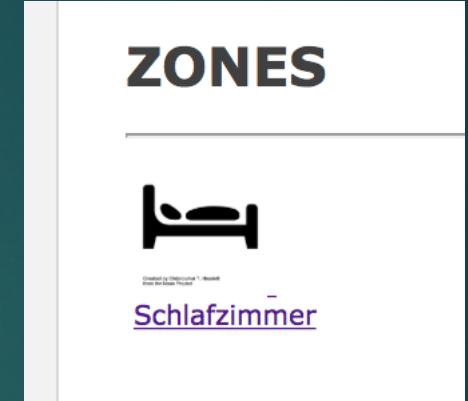
## ZONES



[Schlafzimmer](#)

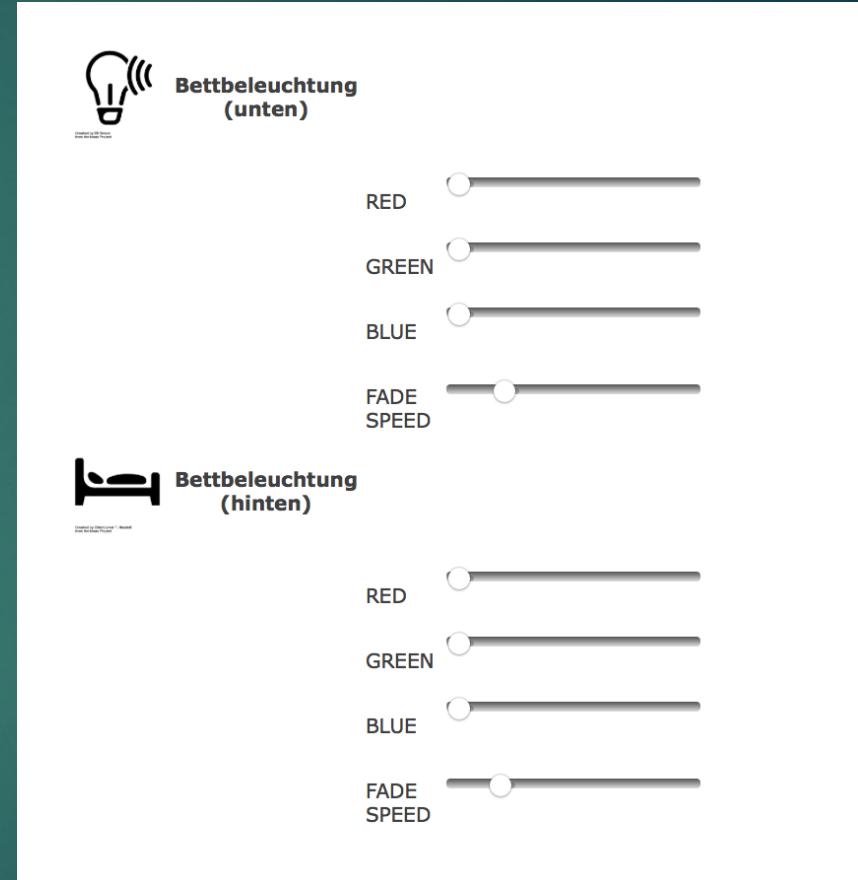
# ZONES

- ▶ A collection of devices
- ▶ Individual Icon



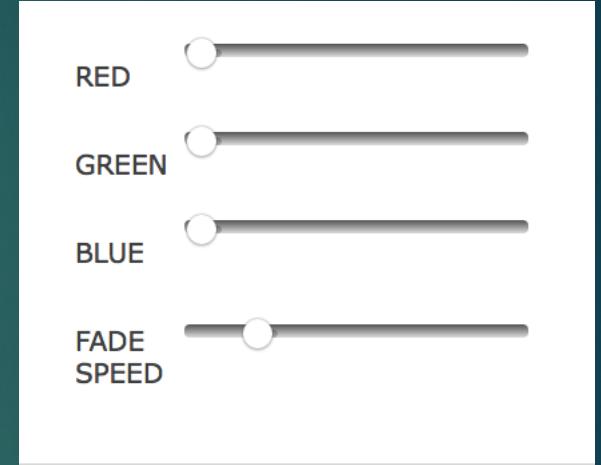
# DEVICES

- Groups a collection of channels
- Can hold up to 255 channels
- Individual icon



# CHANNELS

- A channel equals one DMX-Channel of one real device
- 3 different types : Slider, ON/OFF, Toggle
- Custom value range of every channel



# SCENES

- A scene is a image of all channels in the system
- By switch to the scene all saved channel states will be restored

Scene Name	INFO	DELETE	CAPTURE	TOGGLE SCENE
Alle aus	IS A HOMEKIT DEVICE : 1	<button>DELETE SCENE</button>	<button>CAPTURE VALUES TO SCENE</button>	<button>TOGGLE SCENE</button>
Alle an	IS A HOMEKIT DEVICE : 1	<button>DELETE SCENE</button>	<button>CAPTURE VALUES TO SCENE</button>	<button>TOGGLE SCENE</button>
Tageslicht	IS A HOMEKIT DEVICE : 1	<button>DELETE SCENE</button>	<button>CAPTURE VALUES TO SCENE</button>	<button>TOGGLE SCENE</button>
Nachtlicht	IS A HOMEKIT DEVICE : 1	<button>DELETE SCENE</button>	<button>CAPTURE VALUES TO SCENE</button>	<button>TOGGLE SCENE</button>
Tageslicht 1	IS A HOMEKIT DEVICE : 1	<button>DELETE SCENE</button>	<button>CAPTURE VALUES TO SCENE</button>	<button>TOGGLE SCENE</button>
Tageslicht 2	IS A HOMEKIT DEVICE : 1	<button>DELETE SCENE</button>	<button>CAPTURE VALUES TO SCENE</button>	<button>TOGGLE SCENE</button>
Tageslicht 3	IS A HOMEKIT DEVICE : 1	<button>DELETE SCENE</button>	<button>CAPTURE VALUES TO SCENE</button>	<button>TOGGLE SCENE</button>
YELLOW	IS A HOMEKIT DEVICE : 1	<button>DELETE SCENE</button>	<button>CAPTURE VALUES TO SCENE</button>	<button>TOGGLE SCENE</button>

**Add Scene**

---

Scene-Name

Show in Sidebar

[ADVANCED SETTINGS](#)

Add as HomeKit-Device

**ADD SCENE**

# TASKS

Schedules					
Schedule Name	TOGGLE TIME	SCENE TO TOGGLE	ACTIVE DAYS	DELETE	ENABLE / DISABLE
AUS	02:00	Alle aus	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday	<a href="#">DELETE SCHEDULE</a>	<a href="#">ENABLE SCHEDULE</a>
SUN	05:00	YELLOW	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday	<a href="#">DELETE SCHEDULE</a>	<a href="#">ENABLE SCHEDULE</a>
AUS	07:00	Alle aus	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday	<a href="#">DELETE SCHEDULE</a>	<a href="#">ENABLE SCHEDULE</a>
Nachtlicht	00:00	Nachtlicht	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday	<a href="#">DELETE SCHEDULE</a>	<a href="#">ENABLE SCHEDULE</a>
Tageslicht	23:30	Tageslicht	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday	<a href="#">DELETE SCHEDULE</a>	<a href="#">ENABLE SCHEDULE</a>
Tageslicht	23:00	Tageslicht 1	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday	<a href="#">DELETE SCHEDULE</a>	<a href="#">ENABLE SCHEDULE</a>
Tageslicht	22:30	Tageslicht 2	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday	<a href="#">DELETE SCHEDULE</a>	<a href="#">ENABLE SCHEDULE</a>
Tageslicht	22:00	Tageslicht 3	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday	<a href="#">DELETE SCHEDULE</a>	<a href="#">ENABLE SCHEDULE</a>
Tageslicht	21:30	Tageslicht	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday	<a href="#">DELETE SCHEDULE</a>	<a href="#">ENABLE SCHEDULE</a>
Tageslicht	21:00	Tageslicht 1	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday	<a href="#">DELETE SCHEDULE</a>	<a href="#">ENABLE SCHEDULE</a>
Tageslicht	20:30	Tageslicht 2	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday	<a href="#">DELETE SCHEDULE</a>	<a href="#">ENABLE SCHEDULE</a>
Tageslicht	20:00	Tageslicht 3	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday	<a href="#">DELETE SCHEDULE</a>	<a href="#">ENABLE SCHEDULE</a>
Tageslicht	19:30	Tageslicht	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday	<a href="#">DELETE SCHEDULE</a>	<a href="#">ENABLE SCHEDULE</a>
Tageslicht	19:00	Tageslicht 1	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday	<a href="#">DELETE SCHEDULE</a>	<a href="#">ENABLE SCHEDULE</a>


---

Channel-Name	<input type="text" value="SCHEDULE NAME"/>
Scene to Toggle	<input type="text" value="Alle aus"/> <input type="button" value="▼"/>
TIME SETTINGS	
Toggle Time [FORMAT : HH:MM eg. 09:00 24Hr]	<input type="text" value="00:00"/>
MONDAY	<input checked="" type="checkbox"/>
TUESDAY	<input checked="" type="checkbox"/>

# TASKS

- ▶ Switch to specific scenes at a defined Time and Day
- ▶ Minimum switch time is once a minute
- ▶ Enable/disable tasks

# LINKS

- ▶ <https://github.com/RBEGamer/SmartLightHub>
- ▶ Contains all the software you need to run your own SmartLighHub