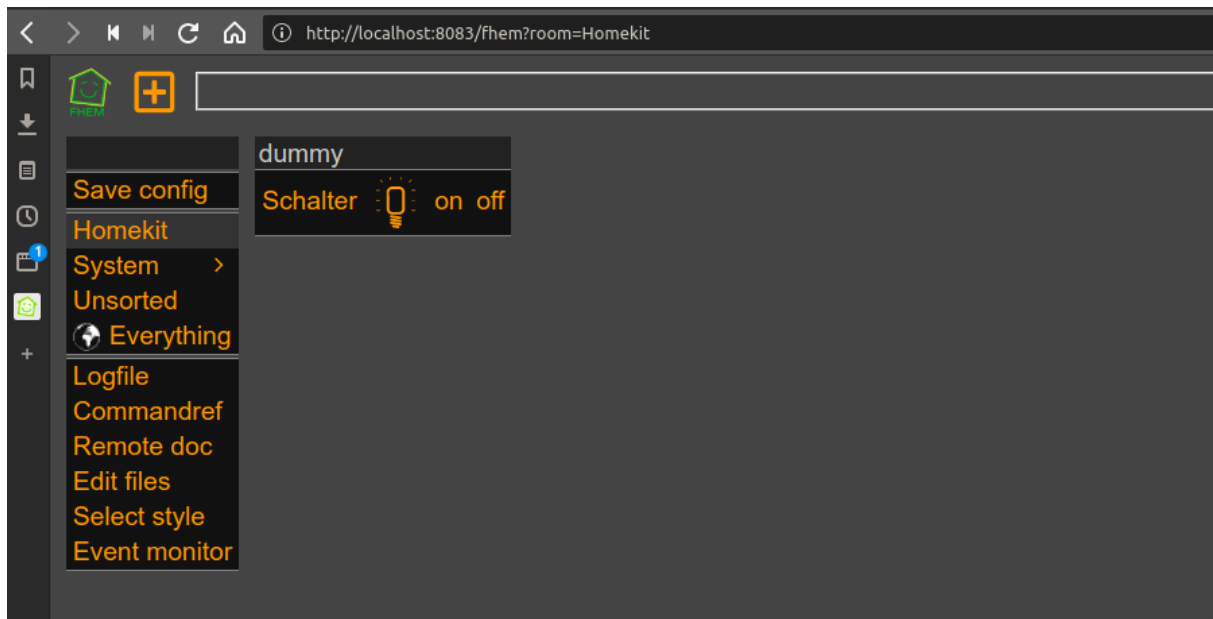

Home Automation Stack



The stack contains everything to run FHEM on a Docker host. Mosquitto is used as message broker. SIRI functions are realized with the help of a homebridge container. The complete stack runs on x86 as well as arm architectures. It is very easy to clone its complete productive environment and has a simple way to build a test system.

Todo

- DBLog Integration
- Boot config Raspberrypi for Homematic modul

define myHmUART HMUARTLGGW /dev/ttyAMA0

Requirements

- docker
- docker-compose

Installation raspberrypi

Raspian Download

Download the image of your choice: Raspian Download Unzip the image and install it with:

```
1  sudo dd bs=4M if=2019-09-26-raspbian-buster-full.img of=/dev/mmcblk0
   conv=fsync
2  sync
```

Eject the card and insert it again to mount the filesystems boot & rootfs. Touch a blank file ssh to enable

```
1  sudo touch /media/boot/ssh
2  sync
3  umount /media/boot
4  umount /media/rootfs
```

Eject the card and insert into your raspberrypi. After that power on the rpi and login with the known

```
1  ssh pi@raspberrypi4
```

```
1  pi@raspberrypi:~ $ passwd
2  Changing password for pi.
3  Current password:
4  New password:
5  Retype new password:
6  passwd: password updated successfully
7  pi@raspberrypi:~ $
```

System Update

```
1  sudo apt-get update
2  sudo apt-get dist-upgrade
```

Set timezone

```
1  sudo dpkg-reconfigure tzdata
```

Raspberry Config

- 1) Expand the root filesystem (A1 / Advanced Options)
- 2) Update raspi-config

```
sudo raspi-config sudo reboot
```

Intall additional packages

```
1 sudo apt-get install wget git apt-transport-https vim telnet zsh zsh-  
autosuggestions zsh-syntax-highlighting
```

Install oh-my-zsh

```
1 sh -c "$(curl -fsSL https://raw.githubusercontent.com/ohmyzsh/ohmyzsh/master/  
tools/install.sh)"
```

Install log2ram (/var/log 2 ram)

```
1 echo "deb http://packages.azlux.fr/debian/ buster main" | sudo tee /  
etc/apt/sources.list.d/azlux.list  
2 wget -qO - https://azlux.fr/repo.gpg.key | sudo apt-key add -  
3 apt update  
4 apt install log2ram
```

Setup ssh key for user

```
1 ssh-keygen -t rsa -b 8192
```

Install .ssh/config file to ignore strictHostKeyChecking

```
1 vi ~/.ssh/config  
2  
3 Host fhemlocalhost  
4 Hostname localhost  
5 Port 222  
6 User fhem  
7 StrictHostKeyChecking no
```

Install docker & docker-compose

```
1 #curl -sSL https://get.docker.com | sh  
2 #sudo systemctl enable docker  
3 #sudo systemctl start docker  
4 sudo apt-get install docker docker-compose  
5 sudo usermod -aG docker pi  
6 sudo reboot
```

git repository export and start all container

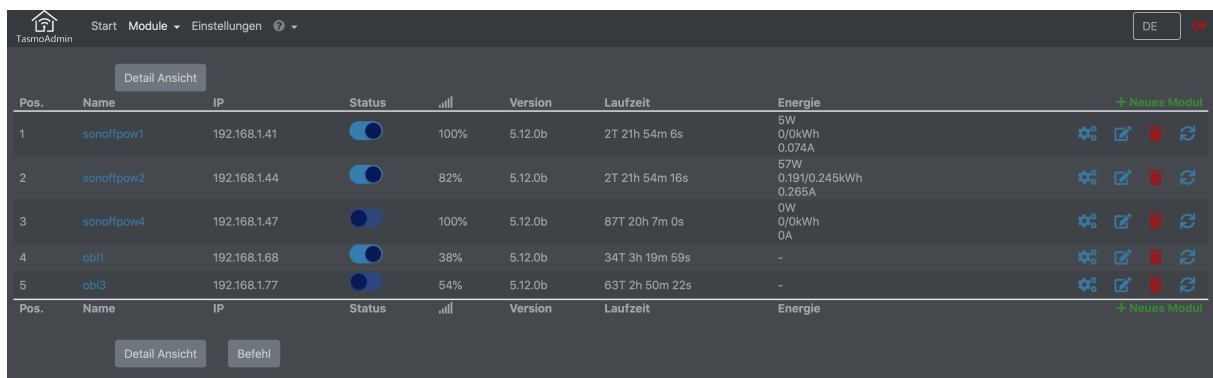
```
1 cd
2 git clone https://github.com/stormmurdock/fhemdocker.git
3 cd fhemdocker
4 docker-compose up
```

Access the application

```
1 http://localhost:80
```

Container

Tasmota Admin



The screenshot shows the Tasmota Admin web interface. At the top, there is a navigation bar with a home icon, the text 'TasmotaAdmin', and a menu with 'Start', 'Module', and 'Einstellungen'. A language selector 'DE' is in the top right. Below the navigation bar, there is a 'Detail Ansicht' button. The main content is a table with columns: Pos., Name, IP, Status, Signal strength, Version, Laufzeit, and Energie. There are five rows of modules. Each row has a set of icons on the right: a gear for settings, a document for logs, a red square for stop, and a refresh icon. A '+ Neues Modul' link is at the top right of the table. Below the table, there are 'Detail Ansicht' and 'Befehl' buttons.

Pos.	Name	IP	Status	Signal	Version	Laufzeit	Energie	
1	sonoffpow1	192.168.1.41	On	100%	5.12.0b	2T 21h 54m 6s	5W 0/0kWh 0.074A	⚙️ 📄 🛑 ↺
2	sonoffpow2	192.168.1.44	On	82%	5.12.0b	2T 21h 54m 16s	57W 0.191/0.245kWh 0.265A	⚙️ 📄 🛑 ↺
3	sonoffpow4	192.168.1.47	On	100%	5.12.0b	87T 20h 7m 0s	0W 0/0kWh 0A	⚙️ 📄 🛑 ↺
4	obi1	192.168.1.68	On	38%	5.12.0b	34T 3h 19m 59s	-	⚙️ 📄 🛑 ↺
5	obi3	192.168.1.77	On	54%	5.12.0b	63T 2h 50m 22s	-	⚙️ 📄 🛑 ↺

Abbildung 1: "tasmotaadmin"

http://localhost:8081

Tasmota Compiler

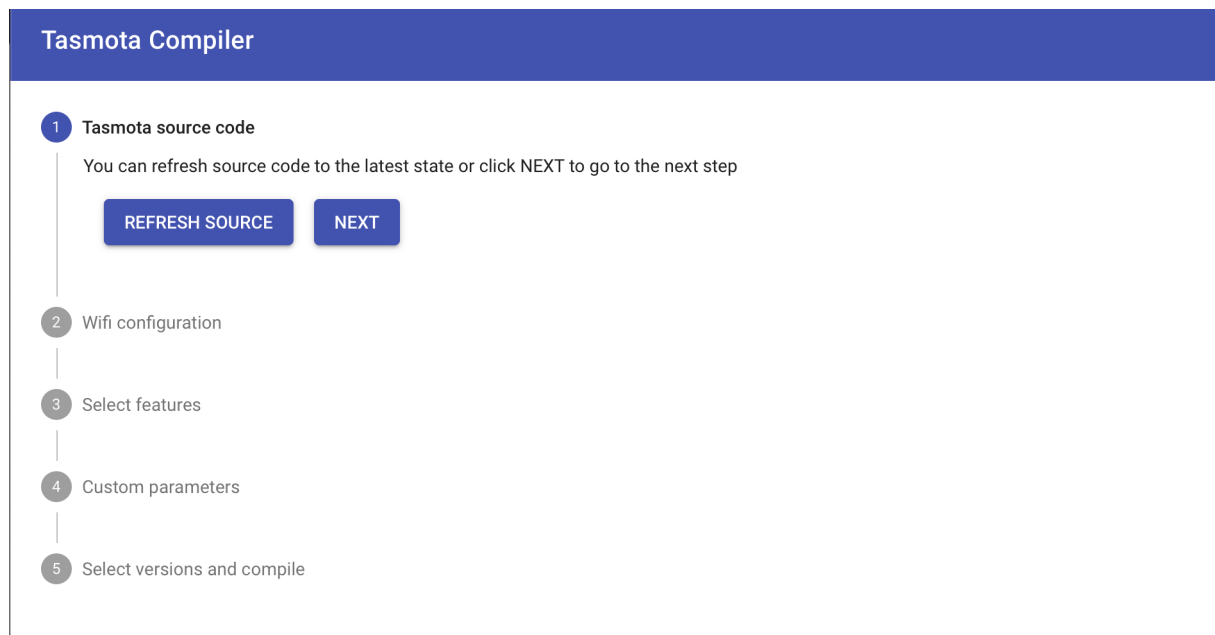


Abbildung 2: "tasmotacompiler"

<http://localhost:8082>

Homebridge

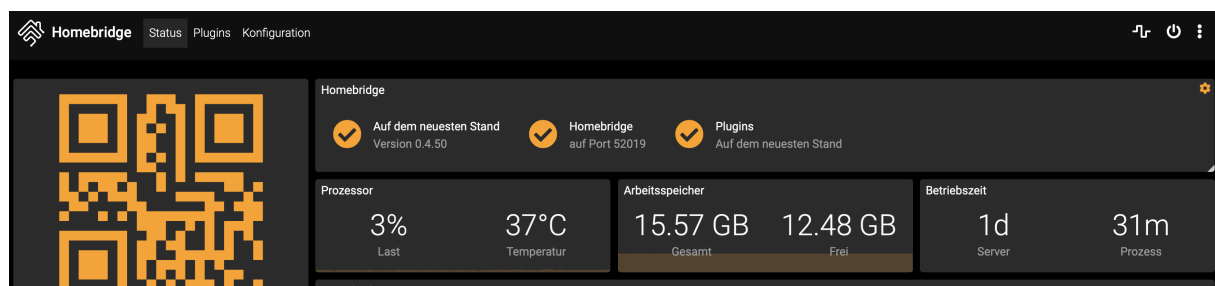


Abbildung 3: "homebridge"

<http://localhost:8080>

portainer.io

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SETTINGS

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Portainer console

Containers > themdocker_them_1 > Console

> _ Execute

Exec into container as default user using command bash Disconnect

For CVS updates and additional information, see
the CVS home page at http://www.nongnu.org/cvs/ or
the CVSNT home page at http://www.cvsnt.org/
fhem@7680499e223d:~\$ ls -l
total 92
-rw-r--r-- 1 fhem fhem 324735 Jan 26 19:30 CHANGED
-rw-r----- 1 fhem fhem 18092 Jan 25 10:21 COPYING
drwxr-x--- 6 fhem fhem 20480 Jan 25 11:32 FHEM
-rw-r----- 1 fhem fhem 28513 Jan 25 10:21 HISTORY
-rw-r----- 1 fhem fhem 42382 Jan 25 10:21 MAINTAINER.txt
-rw-r----- 1 fhem fhem 5061 Jan 25 10:21 Makefile
-rw-r----- 1 fhem fhem 374 Jan 25 10:21 README.SVN
-rw-r----- 1 fhem fhem 935 Jan 25 10:21 README.DEMO.txt
-rw-r----- 1 fhem fhem 1978 Jan 25 10:21 UPGRADE
-rw-r----- 1 fhem fhem 39782 Jan 25 10:21 configDB.pm
drwxr-x--- 45 fhem fhem 4096 Jan 25 10:21 contrib
drwxr-x--- 3 fhem fhem 4096 Jan 25 10:21 demolog
drwxr-x--- 4 fhem fhem 4096 Jan 25 11:32 docs
-rw-r----- 1 fhem fhem 38827 Jan 26 22:21 fhem.cfg
-rw-r----- 1 fhem fhem 38628 Jan 26 19:29 fhem.cfg.bak
-rw-r----- 1 fhem fhem 516 Jan 25 10:21 fhem.cfg.default
-rw-r----- 1 fhem fhem 25544 Jan 25 10:21 fhem.cfg.demo
-rw-r----- 1 fhem fhem 159742 Jan 25 11:32 fhem.pl
drwxr-x--- 2 fhem fhem 4096 Jan 26 22:21 log
drwxr-x--- 4 fhem fhem 4096 Jan 25 10:21 restoreDir
-rw-r----- 1 fhem fhem 0 Jan 25 10:21 run
drwxr-x--- 2 fhem fhem 4096 Jan 26 19:30 unused
drwxr-x--- 6 fhem fhem 4096 Jan 25 10:21 webfrontend
drwxr-x--- 8 fhem fhem 4096 Jan 25 10:21 www
fhem@7680499e223d:~\$

http://localhost:9000

deCONZ Image Container Integration

Raspbian defaults Bluetooth to `/dev/ttyAMA0` and configures a login shell over serial (tty). You must disable the tty login shell and enable the serial port hardware, and swap Bluetooth to `/dev/S0`, to allow RaspBee to work properly under Docker.

- 1) `sudo raspi-config`
- 2) Select Interfacing Options
- 3) Select Serial
- 4) "Would you like a login shell to be accessible over serial?" Select No
- 5) "Would you like the serial port hardware to be enabled?" Select Yes

-
- 6) Exit raspi-config and reboot To swap Bluetooth to /dev/S0 (moving RaspBee to /dev/ttyAMA0), run the following command and then reboot:

```
echo 'dtoverlay=miniuart-bt' | sudo tee -a /boot/config.txt
```

This will exchange the UART and the Mini-UART so the Mini-UART is connected to the bluetooth and the UART to the GPIO pins.

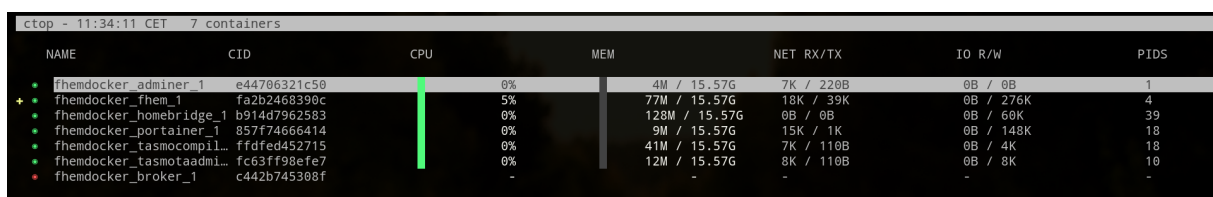
On Raspberry Pi 4 verify that file /boot/config.txt does NOT contain a line “enable_uart=0”. If the line exists remove or comment (#) this line.

After running the above command and rebooting, RaspBee should be available at /dev/ttyAMA0.

ctop

Description

ctop is a commandline monitoring tool for linux containers



NAME	CID	CPU	MEM	NET RX/TX	IO R/W	PIDS
• fhemdocker_adminer_1	e44706321c50	0%	4M / 15.57G	7K / 220B	0B / 0B	1
• fhemdocker_fhem_1	fa2b2468390c	5%	77M / 15.57G	18K / 39K	0B / 276K	4
• fhemdocker_homebridge_1	b914d7962583	0%	128M / 15.57G	0B / 0B	0B / 60K	39
• fhemdocker_portainer_1	857f74666414	0%	9M / 15.57G	15K / 1K	0B / 148K	18
• fhemdocker_tasmocompil...	ffdfed452715	0%	41M / 15.57G	7K / 110B	0B / 4K	18
• fhemdocker_tasmotaadmi...	fc63ff98efe7	0%	12M / 15.57G	8K / 110B	0B / 8K	10
• fhemdocker_broker_1	c442b745308f	-	-	-	-	-

Abbildung 5: “ctop”

Installation

ctop is available in AUR, so you can install it using AUR helpers, such as YaY, in Arch Linux and its variants such as Antergos and Manjaro Linux.

Installation Linux

```
1 sudo wget https://github.com/bcicen/ctop/releases/download/v0.7.3/
   ctop-0.7.3-linux-amd64 -O /usr/local/bin/ctop
2 sudo chmod +x /usr/local/bin/ctop
```

```
1 sudo wget https://github.com/bcicen/ctop/releases/download/v0.7.3/
   ctop-0.7.3-linux-arm -O /usr/local/bin/ctop
2 sudo chmod +x /usr/local/bin/ctop
```

Contributing to fhemdoker

Contributions are encouraged and welcome!