



Enecsys Solar Dashboard

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RELEASE NOTES

Version 4.2.0 April 2020

- Bugfix: updated network installer. It will search the name of the adapter first and will use that one to set the static ip address
- Added logging for database credentials to /home/pi/db_setup_enecsys.log
- Code improvement webinstaller
- Renaming of installer files
- Documentation updated

Version 4.1.0 – March 2020

- Support added for raspbian-buster
- Switched to mariADB

Version 4.0 – 2017, december 12

- Rebuild of installer scripts for Raspbian Stretch OS
- Rebuild webinstaller for php7
- Rebuild installer and security root settings for MariaDB. Root password is auto-generated and shown in display, just make sure to copy it. It won't be stored
- Updated installation manual
- No upgrade scripts present. Upgrading from Jessie to Stretch could give issues

Version 3.0 – 2016, december 24

- Initial release of 3rd version of the Enecsys Dashboard with the E2PV script from Omoerbeek integrated.
- Complete rebuild of version 2.3
- Possible to download daily mysql backups from dashboard
- Automatic build of history process/data to keep tables clean
- Nightly clean of old data
- Complete with installer scripts and webinstaller
- Build on Raspbian Jessie OS
- php5, mysql, phpmyadmin

version 2.3 > 1.0

- Initial versions of dashboard
- integrated script of <https://github.com/omoerbeek/e2pv> in installer
- later integrated script settings in database and editable from within dashboard
- created installer scripts

Credits all versions:

- e2pv script to read data from input/output of enecsys gateway: <https://github.com/omoerbeek/e2pv>
- Dashboard theme: <https://github.com/puikinsh/gentelella>
- Tweakers : https://gathering.tweakers.net/forum/list_messages/1627615/0

INSTALLATION GUIDE

This installation Guide will show you how to completely install a Raspberry Pi (RPI) with Debian Jessie, configre the RPI and install the Enecsys Solar Dasbhoard with the help of installers. This document is a guide, there will also be a video created of the same process. I don't want to make this document to official ;)

STEP 0

You need some software to make it all happen

SD Formatter 4: To format your Micro(SD) card. scroll down to download the windows version.
https://www.sdcard.org/downloads/formatter_4/

Win32Diskmanager : To burn the image on your SD card

Putty: this is an ssh client we need to connect to the rpi and to install and configure it.

downloads:

SD formatter4: <http://www.vanmarion.nl/rpi/SDFormatterv4.zip>

Win32Diskmanager: <http://www.vanmarion.nl/rpi/Win32DiskImager-0.9.5-install.zip>

Putty: <http://www.vanmarion.nl/rpi/putty.zip>

install these programs

Download RPI Image (Stretch Lite): https://downloads.raspberrypi.org/raspbian_lite_latest

Unzip the file.

STEP 1

To be able to send your data to pvoutput you have to create an account and setup your system.
NOTE*: IF you already have a pvoutput account you can skip STEP 1

Register an account

<http://www.pvoutput.org/register.jsp>

After you have logged in go to your account or press settings in the menu

Fill the settings to your needs

Data Settings

Search Min. Outputs	<input type="text" value="0"/>	Systems with less than the number outputs will not be shown on search results
Search Last Output	<input type="button" value="All"/>	Do not display systems that have not created an output in the specified time period
Instant Messages	<input type="button" value="Enabled"/> MESSAGES COMMENTS	Disabling messaging will prevent you from sending and receiving messages
Date Format	<input type="button" value="dd/mm/yy"/>	Display dates in the specified format
Time Format	<input type="button" value="24 Hour"/>	Display time in the specified format
Temperature Unit	<input type="button" value="Celsius"/>	Temperature will be displayed in the above unit
Distance Unit	<input type="button" value="Kilometres"/>	Distances will be displayed in the above unit
Country Filter	<input type="button" value="All"/>	Only display systems from the specified country for Live and Latest Outputs
Timezone	<input type="button" value="(UTC+1:00) Europe/Amsterdam"/>	Data will be adjusted to your selected timezone above
Map Type	<input type="button" value="Auto"/>	Choose the map type to display by default when viewing maps
Generation Colours	■ ■ ■ RESET	Use the above chart colours for generation data
Consumption Colours	■ ■ ■ RESET	Use the above chart colours for consumption data
Net Colours	■ ■ RESET	Use the above chart colours for net data

The alert settings you can skip

The next settings are very important. You have to create an apikey which has to be set in the dashboard select the API to enabled. There should be an api key visible. If not, click on New Key. After that press save settings first

API Settings

API Access **Enabled** ▾ **HELP**

The API must be enabled to successfully process requests.

API Key **56da**

New Key

Your API key is used to update your data automatically, always keep your API key secret.

Read Only Key

Add your own key with read only access to your data, ideal for 3rd party apps

API Referrer

The URL of your webpage. Only applicable if you are embedding [portlets](#).

Registered Systems

System Name	System Id	Status	Add System
Save			

Ok. time to add a system
Fill in the settings to your setup
System settings

System Name	This name will be public to others, so make up a nice one
Status	Active
Number of panels	How many inverters do you have? Set the number
Panel max power	The maximum power of the solar panel
System size	Total power of all panels together
Panel Brand/Model	optional
Orientation	Select your setup
Azimuth	Set a value
Number of inverters	Set the number
Inverter Size	Set same as system size
Country	Set yours
Postal code	Set yours
Array tilt	Set yours
Panel coefficent	Set yours
Shading	Select yours

Example part 1

Edit System

System Name The new name of your system

Status If you have upgraded this system, decommission it and add a new system.

Number of Panels Total number of panels installed.

Panel Max Power Output of your panels in watts.

System Size Your calculated system size in watts, including any additional arrays

Panel Brand/Model Brand and/or model of installed panels, e.g. Sharp NU-A188EY

Orientation Where your panels are facing.

Azimuth Optional: Orientation in degrees, this overrides the orientation setting

Number of Inverters Total number inverters installed - usually 1

Inverter Brand/Model Brand and/or model of installed inverter, e.g. SMA Sunny Boy 3000

Inverter Size Total AC power output of all inverters in watts.

Country Country where your system is installed.

Example part 2

Postcode Australian Postcode, UK Postal District or US ZIP Code

Array Tilt Optional: Angle in degrees your PV is installed at.

Panel Coefficient % Percentage of production lost per degree above 25C

Shading From to (hh:mm) Amount of shade on your system caused by trees and/or other structures.

Secondary Array If the system is split into a second array, enter the array details below

This one is important: Live Settings

Set the status interval to 10 minutes. **Don't change this value to anything else!!**

Live Settings

Status Interval	10 minutes ▾
How often this system will send live updates	
Timezone	(UTC+1:00) Europe/Amsterdam ▾
Data will be adjusted to your selected timezone above	
Adjust Time	None ▾ for Solar ▾ HELP
Update time sent to the API for devices that do not support DST	

All the rest is optional. Save the settings.

After that you will see your system. You

Registered Systems

System Name	System Id	Status	Add System
<input type="checkbox"/> vm01	34223	Active	Edit

To be able to join the Tweakers Team you have to upload at least 20 inputs.

After that you are able to join a team

We have a large group of Enecsys Users, so i would appreciate if you could join the Team :D.

Join the team: open this url: <http://www.pvoutput.org/ladder.jsp?tid=1018>

On the right top side you will see a button: Join or Leave Team

Feel free to join

2 values you need in the dashboard:

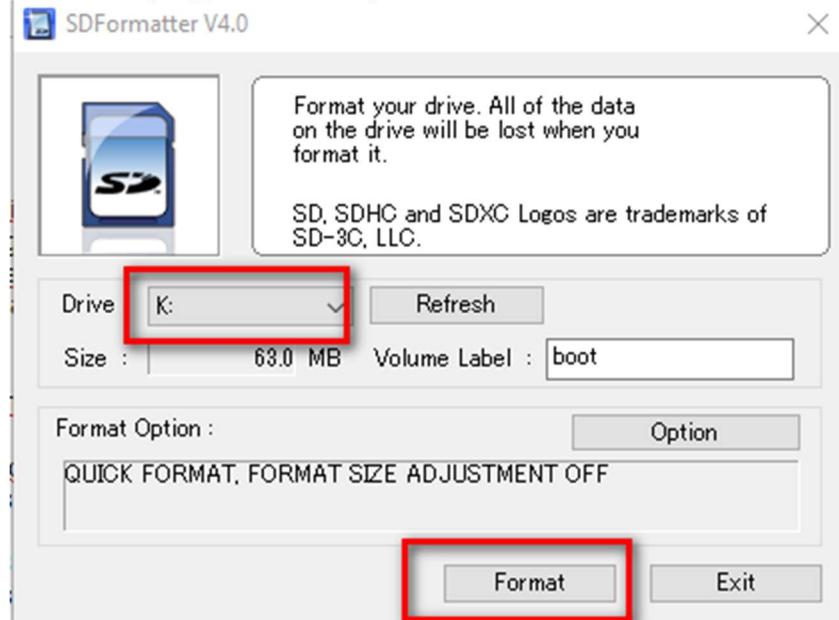
SystemID: you can retrieve that one from the settings page (see screenshot above)

PersonalID : click on Your outputs. In the browser url you will see your personal id

The screenshot shows a web browser window with the URL www.pvoutput.org/list.jsp?userid=37406 highlighted with a red box. Below the URL bar, the PVOutput logo is visible. A red arrow points to the text "u are logged in as jvar Marion" which appears below the logo. At the bottom of the page, the text "m01 7.600kW" is displayed.

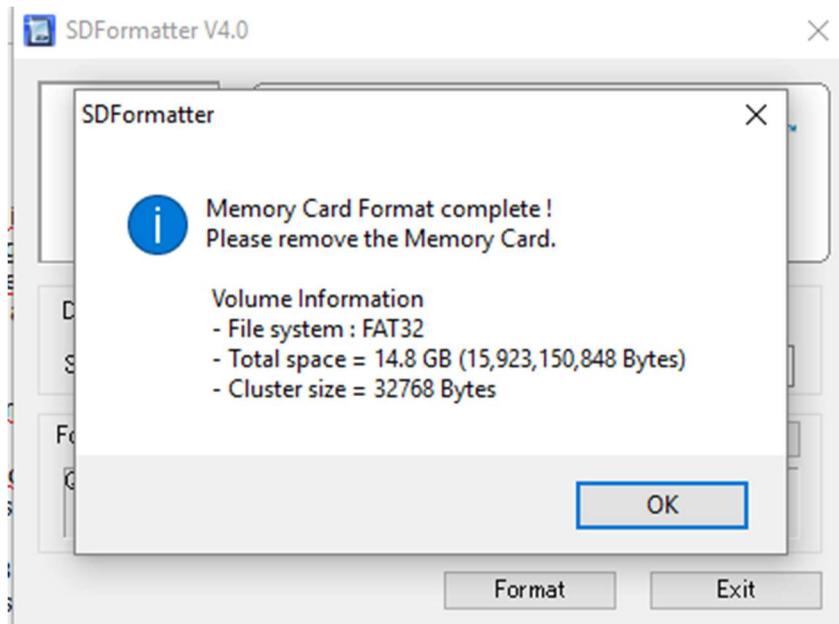
STEP 2

Time to insert your MicroSD. Best to format the SD first with sdformatter4. Start SD formatter 4 and select the drive where your sdcard is plugged into. In my case the K drive



Fig

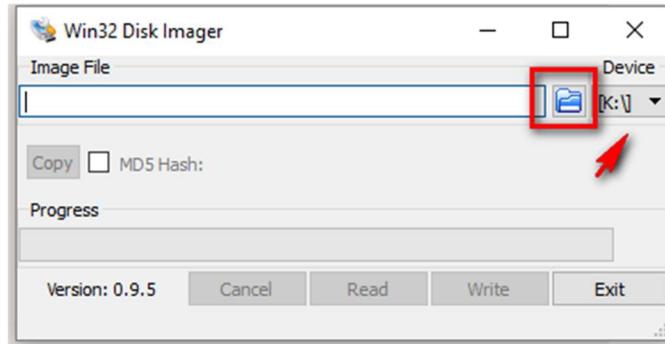
Click on Format, you will get some warnings, just click OK.



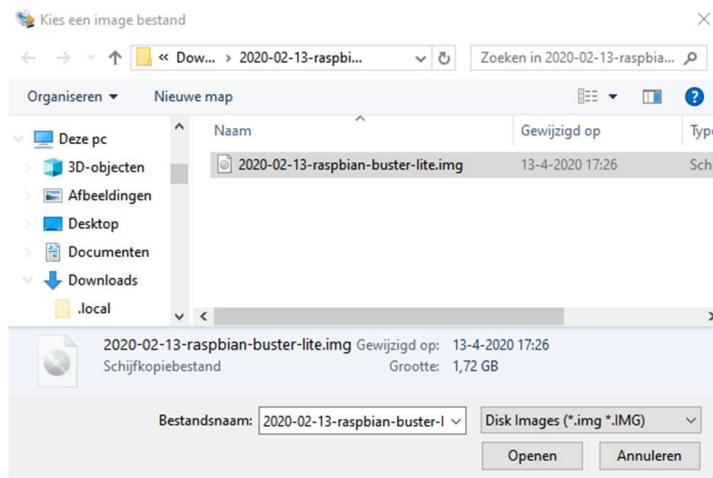
Formatting done. On to the next step.

STEP 3

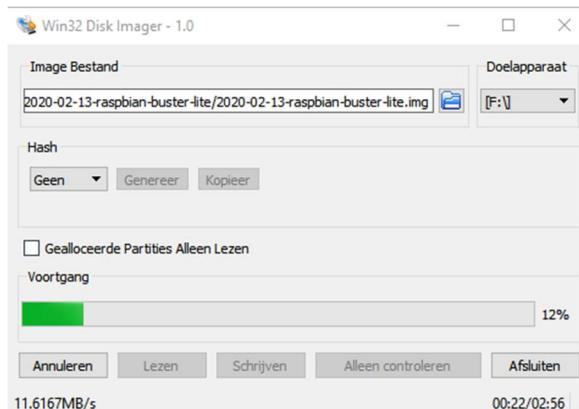
Time to burn the image on the SD Card. Start Win32diskmanager. You will see this screen. Make sure your sd card drive is selected. Click on the browse icon to select the image file you have downloaded and unzipped in step 1



Select the image. If you can't find it on your location, change the Disk Images (*.img *IMG) to *.* and click on open

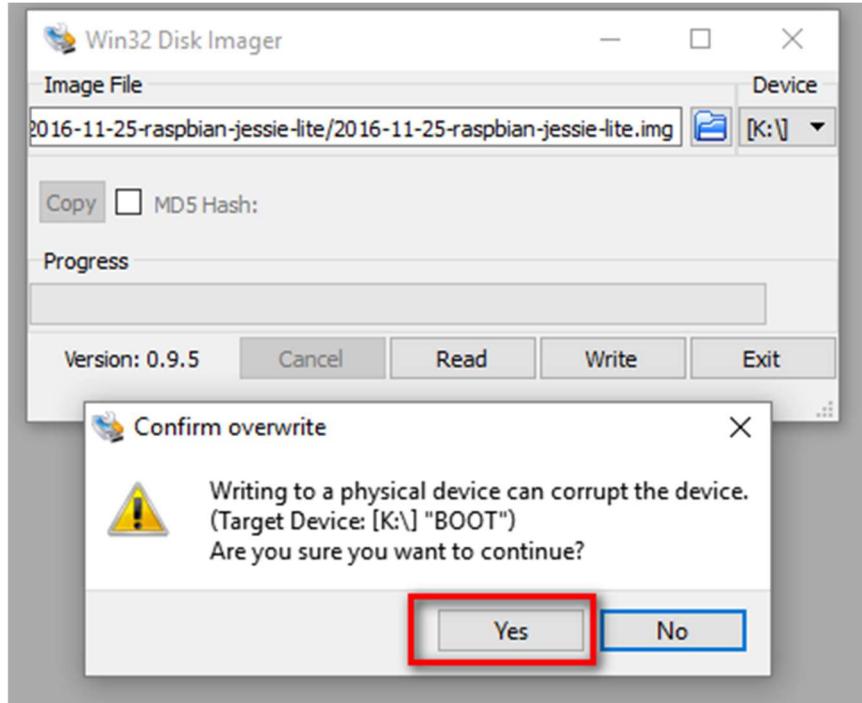


After that the image is selected. Click on Write to burn the image to your SD Card.

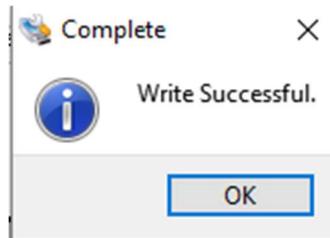


This can take about 5 minutes. Depending on the size of your SD. Get some coffee :D
Sometimes the writing is stuck and nothing happens. Then start over from Step 2. It has happened me quite some times, so don't bother too much about it;)

When you have clicked on Write you will get a warning. Just click OK



When the writing is done you will get a popup



OK. at this point we are not done yet.

Raspberry decided to remove default ssh access to the RPI. And we need SSH.

Download my latest installer zip from my github page

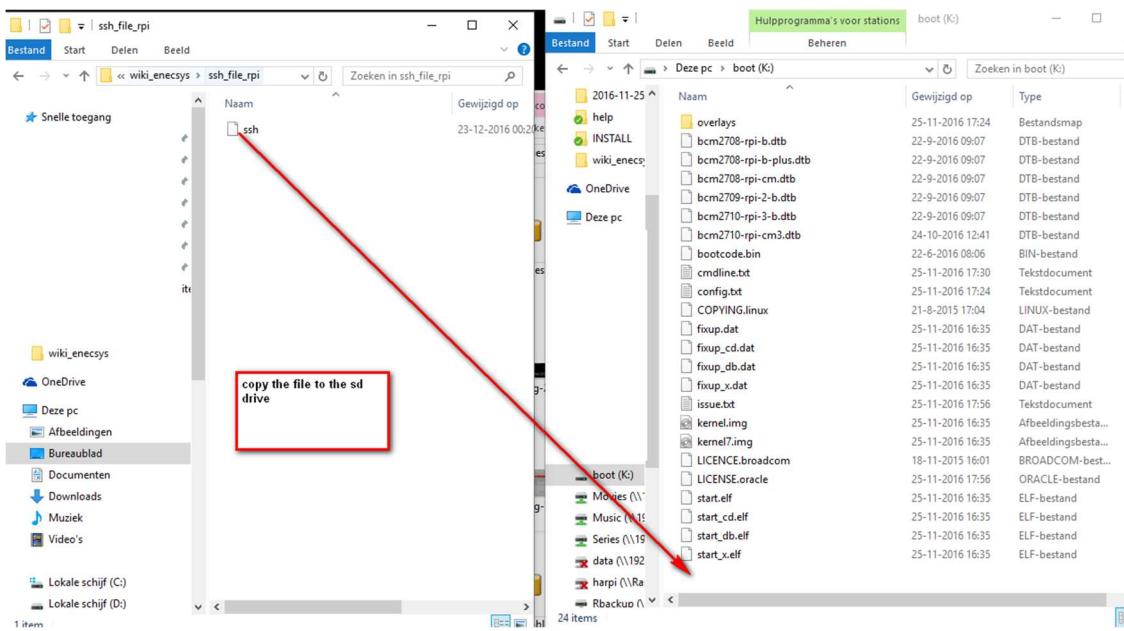
https://github.com/nlmaca/Enecsys_Dashboard/archive/master.zip

In the INSTALL directory you will find a file called ssh

Copy this file to the root of your MicroSD

If you want to do it manually, open Notepad++ (NOT notepad). Make an empty file, save it as ssh (no dot, just ssh) and place it in the root of your SD card.

Or download the file i already created: http://vanmarion.nl/rpi/ssh_file_rpi.zip
unpack the zip file and put it in the root directory



After that you can disconnect the SD Card, stick it in your RPI and power it up and make sure the network cable is connected to your network. It will get an ipaddress automaticly from your router.

STEP 4

OK. How do you find your RPI in your network?

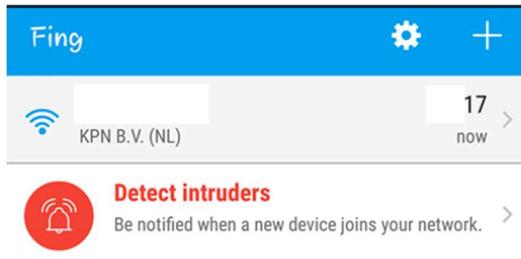
I use a mobile app Fing

Apple: <https://itunes.apple.com/nl/app/fing-netwerk-scanner/id430921107?mt=8>

Android: <https://play.google.com/store/apps/details?id=com.overlook.android.fing&hl=nl>

So i can scan my Wifi network. It should show a rpi in there

Using Fing (android) will show my RPI in my network

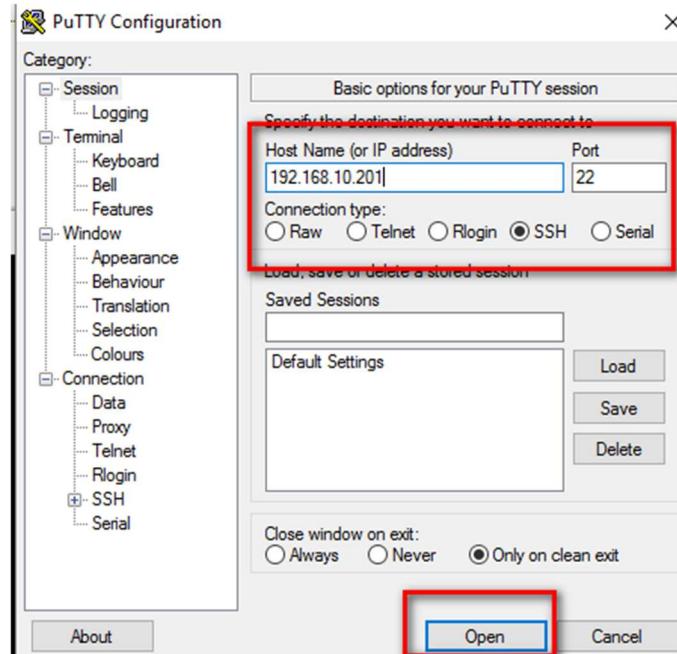


So as soon you have the ipaddress of the RPI we can continue

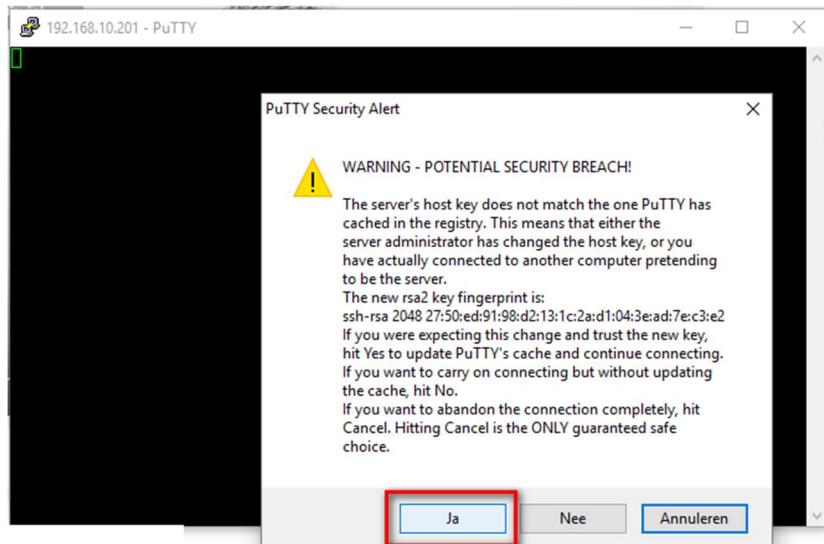
STEP 5

its time to start Putty.exe to connect to your RPI. You have downloaded this in Step 1. in my case my rpi ipaddress is 192.168.10.201

the default ssh port is 22 so we need this when connecting
start putty.exe



you will get a warning (thats normal). Press Yes/ja



login with the default user and password

login: pi
password: raspberry

STEP 6

First things first. We have to configure the RPI. Follow the screens and you should be ok. To start it type this command: **sudo raspi-config**

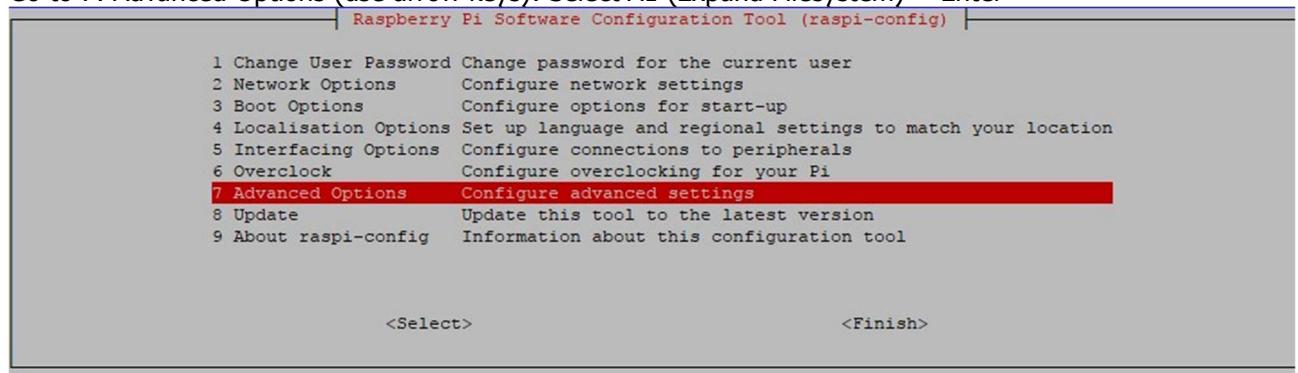
it will show this screen.

When interacting with the screens below use your keyboard:

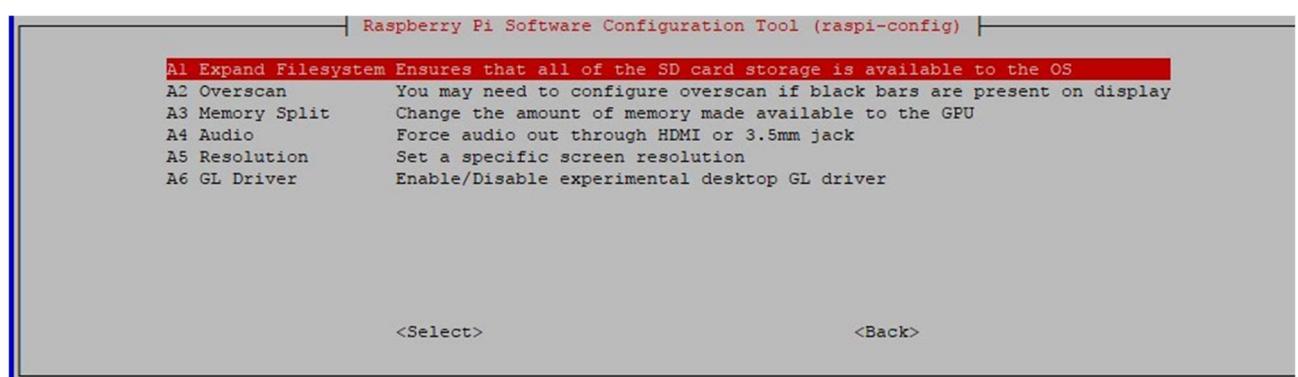
- selection change: TAB
- confirm: ENTER

There are some steps we have to configure. The first one is to expand the filesystem. Otherwise it will only use a limited space of your SD card.

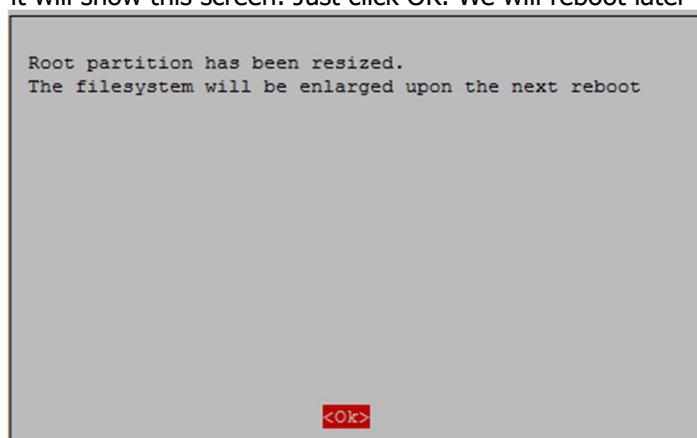
Go to 7: Advanced Options (use arrow keys): Select A1 (Expand Filesystem) > Enter



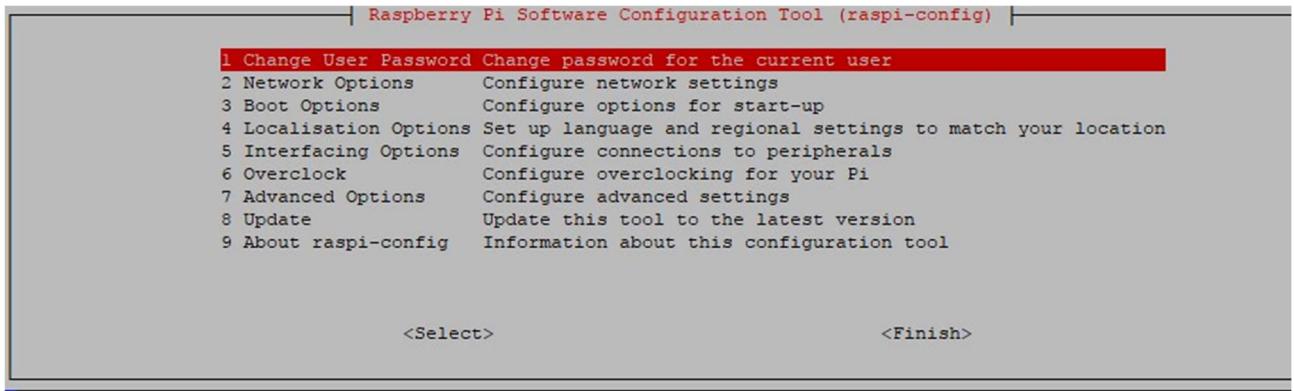
Then select Expand Filesystem



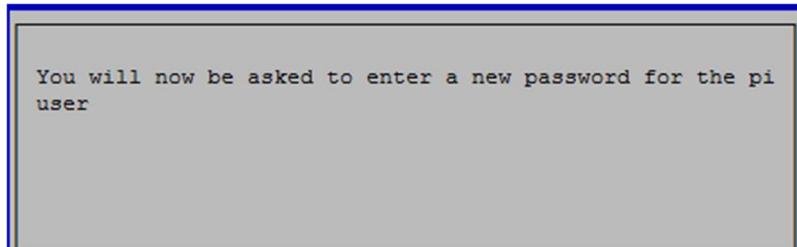
When you pressed enter it will show this screen. Just click OK. We will reboot later



On to changing the password. It is best to set a password of your choice. Make sure to fill it in good (when setting the password it looks like nothing happens, but it will change to what you are typing)



Set the password



Type the new password twice.

Note: You won't see the characters, so make sure you type it correct!. (copy your password from notepad and paste (right-click mouse) is the best way to avoid wrongly typed characters

Enter new UNIX password: █

When the password is changed you will get a notice



Done.

ok after this select 4 (Localisation options) and press enter

```
Raspberry Pi Software Configuration Tool (raspi-config)

1 Change User Password Change password for the current user
2 Network Options Configure network settings
3 Boot Options Configure options for start-up
4 Localisation Options Set up language and regional settings to match your location
5 Interfacing Options Configure connections to peripherals
6 Overclock Configure overclocking for your Pi
7 Advanced Options Configure advanced settings
8 Update Update this tool to the latest version
9 About raspi-config Information about this configuration tool

<Select> <Finish>
```

then select change Timezone

```
Raspberry Pi Software Configuration Tool (raspi-config)

I1 Change Locale Set up language and regional settings to match your location
I2 Change Timezone Set up timezone to match your location
I3 Change Keyboard Layout Set the keyboard layout to match your keyboard
I4 Change Wi-fi Country Set the legal channels used in your country

<Select> <Back>
```

select the next screens to the location where you are

```
Configuring tzdata
Please select the geographic area in which you live. Subsequent configuration questions will narrow this down by representing the time zones in which they are located.

Geographic area:

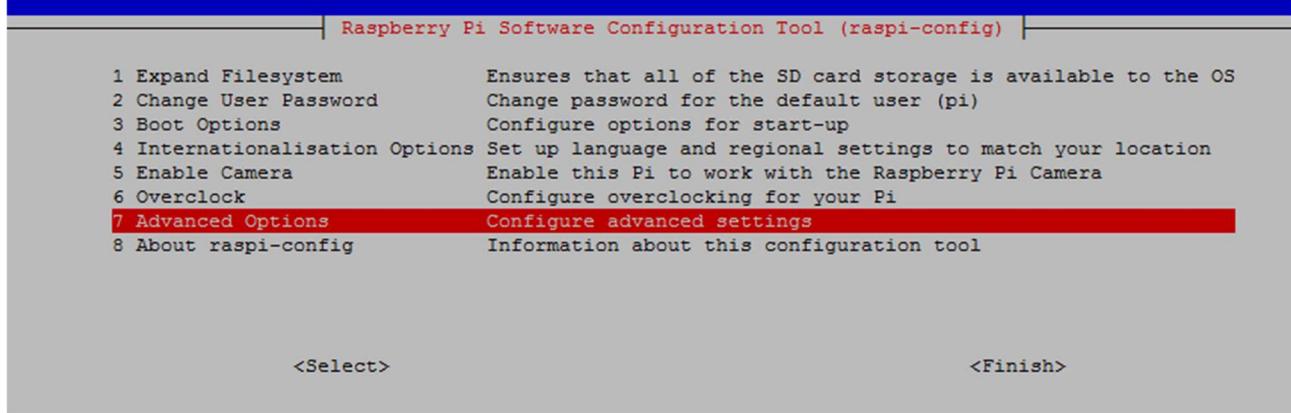
Africa
America
Antarctica
Australia
Arctic Ocean
Asia
Atlantic Ocean
Europe
Indian Ocean
Pacific Ocean
System V timezones
US
None of the above

<Ok> <Cancel>
```

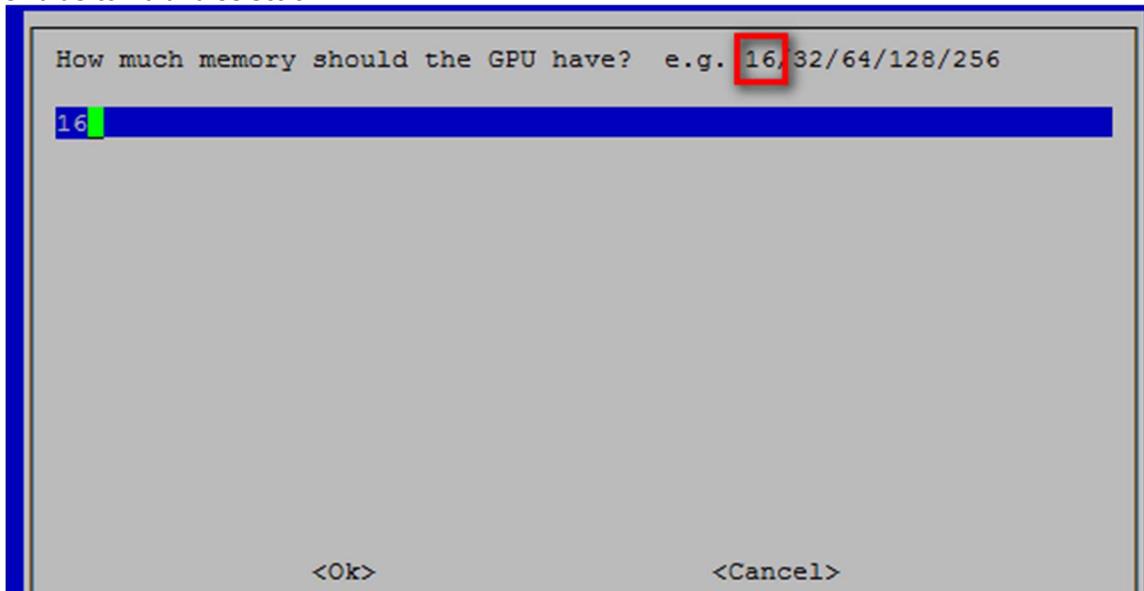


and press enter. It will automatically send you back to the main screen.

Select 7 Advanced options and press enter

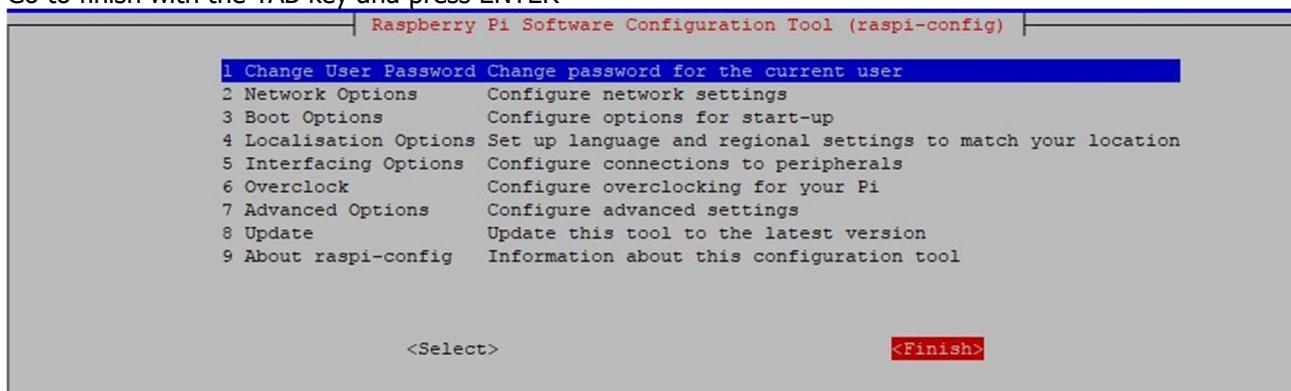


First select A3 Memory Split and press enter
set the value to 16 and select ok



ok all done.

Go to finish with the TAB key and press ENTER



It will ask for a reboot. Press yes.

This will use the complete space of the MicroSD card. The extra space is needed for installation files and data storage.

After the RPI has been rebooted. The rpi is pretty quick in rebooting. So just wait a minute. Again connect to it with Putty (see step 5). However, now connect with the new password you have set.

STEP 7

First make sure the OS is up-to-date. We will run an update and upgrade in one command. Run it with sudo (privileged rights)

Command: sudo apt-get update -y && sudo apt-get upgrade -y

```
Using username "pi".
Linux raspberrypi 4.19.97-v7+ #1294 SMP Thu Jan 30 13:15:58 GMT 2020 ar
The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Mon Apr 13 17:56:31 2020 from 192.168.10.200

SSH is enabled and the default password for the 'pi' user has not been
set. This is a security risk - please login as the 'pi' user and type 'passw

Wi-Fi is currently blocked by rfkill.
Use raspi-config to set the country before use.

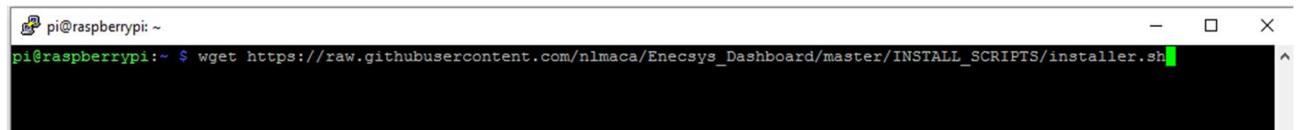
pi@raspberrypi:~ $ sudo apt-get update -y && sudo apt-get upgrade -y
```

It can take some time to update. Done?. The system is up-to-date now.

Time to start the installer process. Use only the url in this documentation

Download the Installer first

wget https://raw.githubusercontent.com/nlmaca/Enecsys_Dashboard/master/installers/installer.sh



A screenshot of a terminal window titled 'pi@raspberrypi: ~'. The window shows the command 'wget https://raw.githubusercontent.com/nlmaca/Enecsys_Dashboard/master/INSTALL_SCRIPTS/installer.sh' being typed into the terminal. The terminal is black with white text, and the window has a standard operating system title bar at the top.

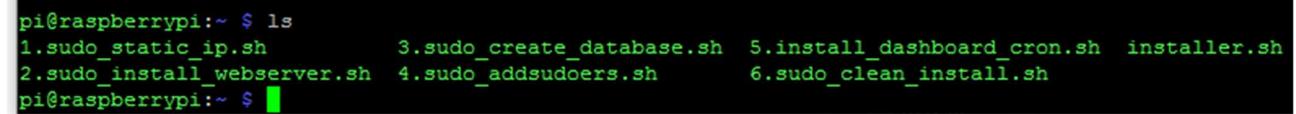
after this you have to set executable rights:

chmod +x installer.sh

Ok. Now we are going to run the installer which will download all the necessary other installer scripts. Run the installer

./installer.sh

You should see these files (type in: ls) to see the files



A screenshot of a terminal window titled 'pi@raspberrypi: ~'. The window shows the command 'ls' being run, displaying a list of files: 1.sudo_static_ip.sh, 2.sudo_install_webserver.sh, 3.sudo_create_database.sh, 4.sudo_addsudoers.sh, 5.install_dashboard_cron.sh, 6.sudo_clean_install.sh, and installer.sh. The terminal is black with white text, and the window has a standard operating system title bar at the top.

All these files are needed for the dashboard installation. So lets start with the first one

STEP 8

Time to set a static ipaddress to your RPI. This script will set the current ipaddress to a static one. Just run the script, you don't have to set the ipaddress and netmask anymore in this new setup. It will add some comment lines in the /etc/dhcpcd.conf file So if you run it twice it will say that it already is changed.

If you want to set a static ipaddress yourself then skip this step.

Run the command WITH SUDO!!

sudo ./1.LAN_static_ip.sh

```
Your current ip address: 192.168.10.232 / Gateway: 192.168.10.254  
*NOTE*: Settings are added. Reboot your rpi and check if you can connect again to IP: 192.168.10.232 on ssh port: 22  
pi@raspberrypi:~ $
```

If you want to check what happened open the file /etc/dhcpcd.conf In the end you will see settings like this

```
# fallback to static profile on eth0  
#interface eth0  
#fallback_static eth0  
###Added by NLMaca - RPI static ip installer###  
interface eth0  
static ip_address=192.168.10.222/24  
static routers=192.168.10.254  
static domain_name_servers=192.168.10.254  
###END NLMaca - RPI static ip installer###
```

Reboot the RPI so changes take place

sudo reboot

and check if you can connect to the ipaddress given in your display.

STEP 9

ok. the next script wil take a bit longer. It will update the rpi (again) and install the mysql server, webserver, php, phpmyadmin

Raspbian now uses MariaDB, which has a slightly new approach on password management. Without adjustment you could login without a password. Time to set some security on that. The script will run the commands, you only have to answer some questions.

A new mysql root password will be automaticly generated.

So, lets start:

Run this one **WITH SUDO**

sudo ./2.sudo_install_webserver.sh

```
pi@raspberrypi:~ $ sudo ./2.sudo_install_webserver.sh
Update system first
Get:1 http://archive.raspberrypi.org jessie InRelease [22.9 kB]
Get:2 http://mirrordirector.raspbian.org jessie InRelease [14.9 kB]
Get:3 http://archive.raspberrypi.org jessie/main armhf Packages [130 kB]
Get:4 http://mirrordirector.raspbian.org jessie/main armhf Packages [8,981 kB]
Get:5 http://archive.raspberrypi.org jessie/ui armhf Packages [53.6 kB]
Ign http://archive.raspberrypi.org jessie/main Translation-en_GB
Ign http://archive.raspberrypi.org jessie/main Translation-en
```

What is this script doing:

- updating your system
- installing php7 and packages, mysql, apache2, phpmyadmin and securing your database with a new root password
- The generated root password will be displayed at the end. Make sure to copy it. It will also be placed in /home/pi/db_setup_enecsys.log (in case you forget it).

The install process continues. It can take some time. Don;t worry when nothing happens. A lot is happening on the background.

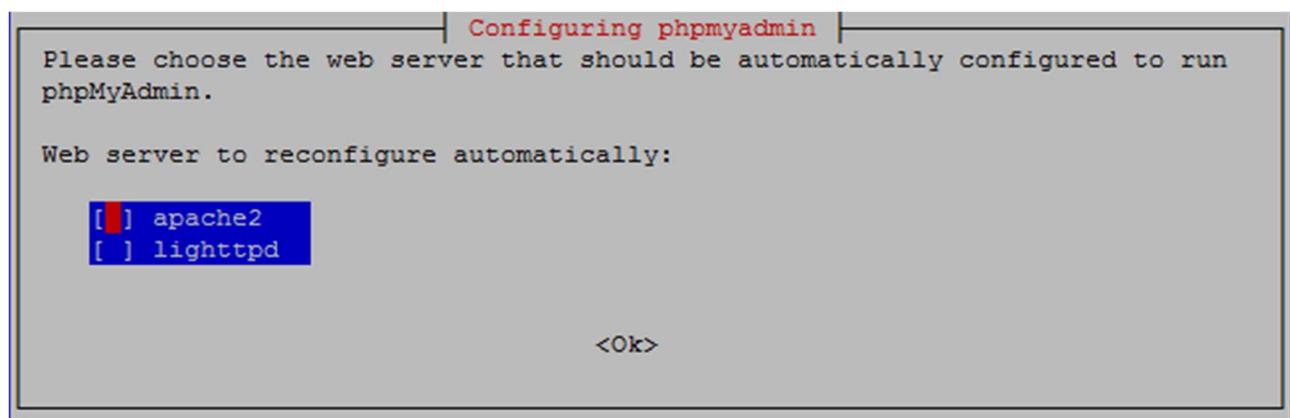
At the end of the script you will see the new mysql password in your screen. Make sure to copy it, because its random generated and not saved

At some point you have to make a selection for which webserver to use. Select Apache2

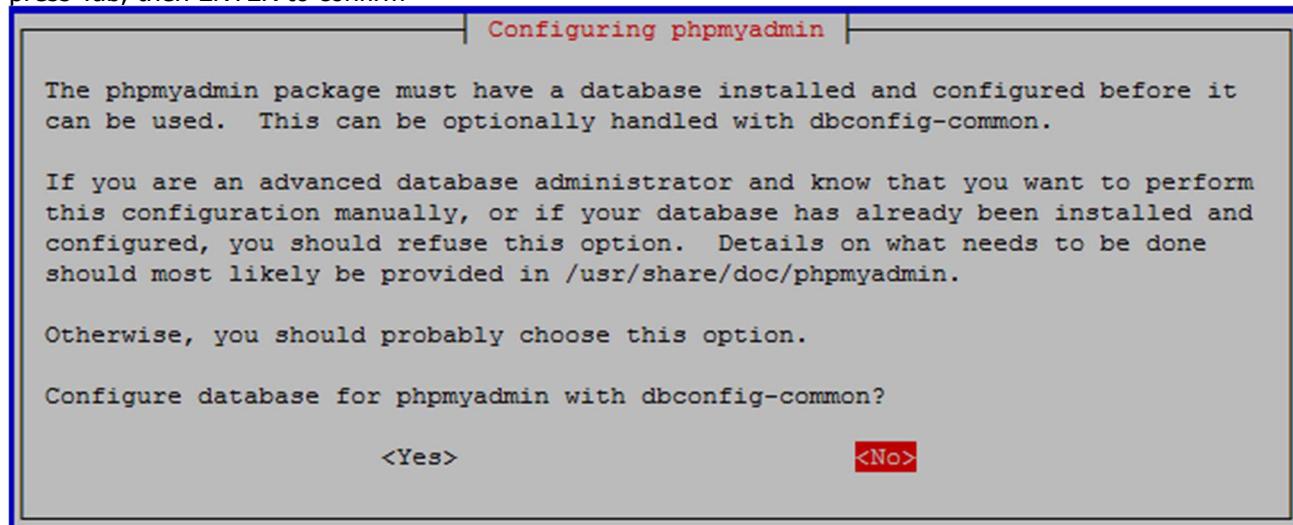
select apache: SPACEBAR

select finish: TAB

confirm: ENTER



next question is for phpmyadmin. Select no
press Tab, then ENTER to confirm



At the end all services will be restarted and you new MySQL root password will be displayed in your screen.
Example:

```
Step 6: restart apache and mysql
-----
Just a reminder. Did you save the Root password?
Copy this new Mysql Root password and keep it in a safe place:
12a90591277b6e1ead9b

Installation Done! > Go to script No 3
```

"-----"
"Copy this new Mysql Root password and keep it in a safe place!"

(update april 2020. The credentials will also be saved on your pi in /home/pi/db_setup_enecsys.log)
But make sure to copy it, because you need it in the next step

Done. Lets go to the next step.

STEP 10

I rebuild this script so a database is created with a prefix and random second part. Username and password are also pre-generated and displayed after installation is done. All you need is to set the mysql ROOT password you have got in the previous step

Requirements: mysql root password standby

(update april 2020. The credentials will also be saved on your pi in /home/pi/db_setup_enecsys.log)

So. start the script again WITH SUDO

sudo ./3.sudo_create_database.sh

question: Enter the mysql root password (right-click for paste)

```
pi@raspberrypi:~ $ sudo ./3.sudo_create_database.sh
Enter the MySQL root password:12a90591277b6elead9b
First check if the database exists or not
Database does not exist. A new one will be created
The database, username and password will be created
-----
MySQL Installation Done!
The credentials are also saved to /home/pi/db_setup.log
Save the database credentials on a safe place. You will need them in the install process
Start script No 4.
```

Ok. installation went without problems. The database is created

Copy the credentials. They are exported to /home/pi/db_setup.log. Do this by running the cat (read) command:

cat /home/pi/db_setup_enecsys.log

```
pi@raspberrypi:~ $ cat /home/pi/db_setup_enecsys.log
-----
Database has been created successfully ,save these credentials!!
-----
Database Info:
Mysql root user      : root
Mysql root Password: 12a90591277b6elead9b

Database Name        : enecsys_ba6b20
Database User        : enecsys_ba6b20
Database Password   : e94a3e3f937c6d93
-----
```

Again, save the credentials, you will need them later on.

STEP 11

The next script is an easy one, it will add the apache user to the sudo list, so you are able to reboot the RPI from within the dashboard. It will also grant the apache user permissions to run the cronjobs

run the script WITH SUDO

sudo ./4.sudo_addsudoers.sh

```
pi@raspberrypi:~ $ sudo ./4.sudo_addsudoers.sh
Line added to sudoers
Installation Done. Go to step No 5.
pi@raspberrypi:~ $
```

STEP 12

ok. this is an important one to run it right. You have to set a webdirectory as a parameter, so for example if you want to see it in the browser as http://192.168.10.201/enecsys_solar you have to set **enecsys_solar** as parameter. This wil also install all the cronjobs on the pi user based on the parameter you set. You can use enecsys_solar if you don't know what i mean;).

This command will download all the files from my github page to your RPI and will unpack it into the webdirectory. So the hard part is done for you automatically :D

You have to run this script **WITHOUT SUDO**. So don't set sudo in front of it. Because we need everything to run on the pi user, and NOT on the root

./5.install_dashboard_cron.sh enecsys_solar

```
pi@raspberrypi:~ $ ./5.install_dashboard_cron.sh enecsys_solar
```

It will download the files, unpack them, install them, install the cronjobs. After that you will get this message. In there you will see an url. Copy this one into your browser

```
inflating: master/pages/settings_user_update.php
inflating: master/pages/usage_system.php
inflating: master/pages/widget_live_inverters.php
inflating: master/currency_symbols.php
Checking if cronjobs exists for this installation and pi user. If o
s exists they will be deleted.
Installation Done.
Open your browser and go to:
http://192.168.10.201/enecsys_solar/install_process.php
pi@raspberrypi:~ $
```

Dashboard Installer

STEP 13

on to the webinstaller. Open the url in your browser to start the dashboard installation, make sure to enter the complete url. In my case: http://192.168.10.201/enecsys_solar/install_process.php

after that agree to the disclaimer and press continue

Dashboard Configuration

Step 1:

Copyright (c) 2016 Jeroen van Marion jeroen@vanmarion.nl
Permission to use, copy, modify, and distribute this software for any purpose without fee is hereby granted.
just give me some credit when you talk about it :D

I agree to this

Continue

next it will check if the config file is writable. If green press next.

Note: if the file is not writable

Run this command from the commandline: (if you used another name in step12, replace this is also in the command)

Chmod 777 /var/www/html/enecsys_solar/include/config.php

Otherwise just continue

Dashboard Configuration

Step 2:

check if you match the requirements.

PHP version	Config writable
Ok	Writable

Continue

Next screen is where we have to set the database credentials you have set in STEP 10

You only have to set: (which was created in step 10).

Forgot them? Go back to your putty commandline and type:
Cat /home/pi/db_setup_enecsys.log

This will show you the database credentials you will need in this step

- Database Name
- Database UserName
- Database Password

Fill them in into the form and click on install. This will create the mysql tables into the database and update the config with the database credentials.

Note: i have no idea why, but my RPI-3 is pretty slow in this process, which didn't happen before on earlier raspbian operating systems. Maybe its just getting old 😊.

It was done under 3 minutes though.

Dashboard Configuration

Database Host *

Database Name *

Database UserName *

Database Password *

directory *

Install!

ok. almost done.

The default credentials are:

username: admin

password: dashboard

Dashboard Configuration

Step 4: Finalize

Deployment complete.

*NOTE: First login into your dashboard. If everything is ok, make sure to run the cleanup script from the command line.
See the installation procedure for that Your dashboard URL: http://192.168.10.201/enecsys_solar

Default login: admin

Default password: dashboard

Go to your dashboard

Click on: go to your dashboard and bookmark the page.

NOTE. YOU ARE NOT DONE YET.

Follow this last step

STEP 14

Please go the last step to cleanup the INSTALL files. Run the last script **WITH THE WEBDIRECTORY** (see step 12). This will remove the install process and sql files. You don't need them anymore.

sudo ./6.sudo_clean_install.sh enecsys_solar

Ok. now you are done. Logout of the RPI by using this command:

exit

STEP 15

The next step is to set your Enecsys Gateway to the new RPI address. You can find the ipaddress of the Enecsys gateway on the gateway itself



It is best to set the Enecsys Gateway to a static ipaddress. You can do that by deselecting the DHCP because in my experience the gateway will change ipaddresses when you reboot your router.

Go to the ipaddress of your enecsys gateway in the browser and login (i don't have the credentials, you should have them). Default credentials are:

username: admin

password: password

Make sure DHCP settings is not selected

In the Remote server address or name enter the ipaddress of the RPI. In my case that would be 192.168.10.201

Main Settings
Home
Debug Information

Enecsys Ethernet Gateway Settings

Take great care in adjusting these settings and if in doubt consult your system administrator.
If you get the settings wrong you can lose contact with the gateway.

Gateway Serial Number 2000010466 Online

DHCP Settings Enable

Fixed IP Address	192.168.0.139
Subnet Mask	255.255.255.0
Network Gateway IP Address	192.168.0.6
Primary DNS Server	8.8.8.8
Secondary DNS Server	8.8.4.4

Proxy Settings Enable

Proxy Server Address or name	gw.enecsysmonitor.net
Proxy Server Port number	5040
Use Authentication <input checked="" type="checkbox"/> Enable	admin
Proxy Username	admin
Proxy Password

Configure remote Server

Remote Server Address or name	5040
-------------------------------	------

Configure NTP Server

NTP Server Address	pool.ntp.org
--------------------	--------------

Apply New Settings

(c) 2009 Wireless Measurement Ltd. All rights reserved.

After that Apply New settings.

Ok, the hard part is done. Time to do the fun stuff now.

Time to go the dashboard to input your inverters, and configure all the settings

STEP 16

Dashboard configuration

There are 2 pages you have to edit in the dashboard. Login in the dashboard. By now you should know how to get there (see step 13).

go to settings-> E2PV

make sure these fields are adjusted: **common mistake is that users add the personal id in the systemid field. So make sure you set the correct one!!**

E2PV Overview

General Settings

Description	Value
Verbose: ⓘ	0
Total Inverters: ⓘ	0
PVOutput Apikey:	apikey
PVOutput System ID:	0
Lifetime: ⓘ	0
Mode: ⓘ	AGGREGATE
Extended: ⓘ	0
AC: ⓘ	0

[Edit e2pv Settings](#)

Verbose, Mode and Extended can not be changed.

After that set the general settings. The data is not depending on it, but its best to configure the settings first fill them to your needs

System Settings

Description	Value
Enecsys Gateway IP:	0.0.0.0
Language:	English
City:	Emmen
Country:	Netherlands
Timezone:	Europe/Amsterdam
Currency:	Euro
kWh Price:	0.22
Temperature:	Celsius
PV Output ID:	37406
PV Output System ID:	34223
PV Output Team ID:	1018
PV Output Team Name:	Enecsys by Tweakers

[Edit Settings](#)

The last setting for now is the Settings → Inverters
you will have to set all the inverter serial numbers you have

Inverter: The inverter serial number.

Inverter type: select the type of your panels

part nr: optional

build date: optional

Duo single: select the inverter type duo/single

Watt panel 1, 2 . Set the watt for each panel

Alias: example: top left panels or bottom roof

Add Inverter

Inverter *	number starts with a 1
Inverter Type	-- Select --
Part nr	000000000000
Build date	2020-04-13 18:54:24
Duo/Single*	-- Select --
Watt panel 1 *	
Watt panel 2 *	
Alias	
<input type="button" value="Add"/> <input type="button" value="Cancel"/>	

After you have set all your inverters and settings its time to reboot the rpi.

YOU NEED TO REBOOT EVERY TIME YOU CHANGE THE E2PV SETTINGS!!

Go to System-> reboot/Shutdown

Click on Reboot RPI to confirm all the changes and to reboot the RPI.

After the reboot you have to wait for data coming in. (so you need daylight)

Ok. now you are done. There is a help page in the dashboard with common issues and a short knowledge base.

Have fun

regards,

NLMaca / Jeroen van Marion