Enecsys Solar Dashboard

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update 2017, december 12
version 4.0 – Raspbian Stretch

RELEASE NOTES

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
– Dasbhoard 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, confgure 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   [0]

Systems with less than the number outputs will not be shown on search results

Search Last Output   [All ▼]

Do not display systems that have not created an output in the specified time period

Instant Messages   [Enabled ▼] MESSAGES | COMMENTS

Disabling messaging will prevent you from sending and receiving messages

Date Format   [dd/mm/yy ▼]

Display dates in the specified format

Time Format   [24 Hour ▼]

Display time in the specified format

Temperature Unit   [Celsius ▼]

Temperature will be displayed in the above unit

Distance Unit   [Kilometres ▼]

Distances will be displayed in the above unit

Country Filter   [All ▼]

Only display systems from the specified country for Live and Latest Outputs

Timezone   [(UTC+1:00) Europe/Amsterdam ▼]

Data will be adjusted to your selected timezone above

Map Type   [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 visable. If not, click on New Key.
After that press save settings first

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 coeffecent	Set yours
Shading	Select yours

Example part 1

Edit System

System Name   DeWilg
The new name of your system

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

Number of Panels   19
Total number of panels installed.

Panel Max Power   240
Output of your panels in watts.

System Size   4560
Your calculated system size in watts, including any additional arrays

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

Orientation   South West ▼
Where your panels are facing.

Azimuth   80.00
Optional: Orientation in degrees, this overrides the orientation setting

Number of Inverters   10 ▼
Total number inverters installed - usually 1

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

Inverter Size   4560
Total AC power output of all inverters in watts.

Country   Netherlands ▼
Country where your system is installed.

Example part 2

Postcode   [   ]   Edit Location
Australian Postcode, UK Postal District or US ZIP Code

Array Tilt   35.00
Optional: Angle in degrees your PV is installed at.

Panel Coefficient   0.05   %
Percentage of production lost per degree above 25C

Shading   Low ▼

From [   ] to [   ] (hh:mm)
Amount of shade on your system caused by trees and/or other structures.
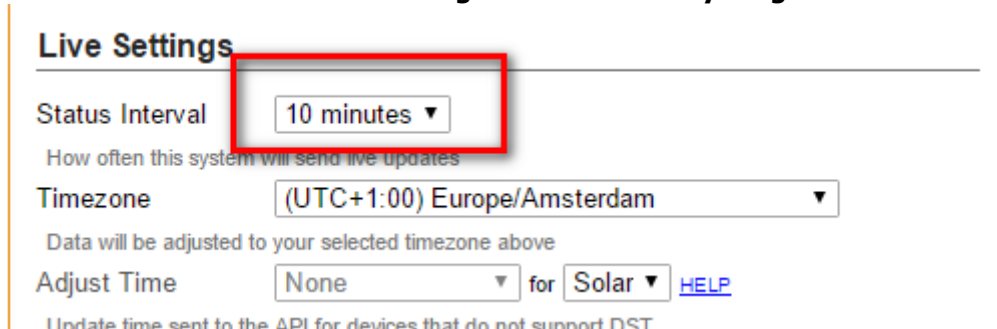
Secondary Array   No ▼
If the system is split into a second array, enter the array details below

This one is important: Live Settings
Set the status interval to 10 minutes. **Don't change this value to anything else!!**

All the rest is optional. Save the settings.
After that you will see your system. You

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 retreive that one from the settings page (see screenshot above)
PersonalID : click on Your outputs. In the browser url you will see your personal id

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
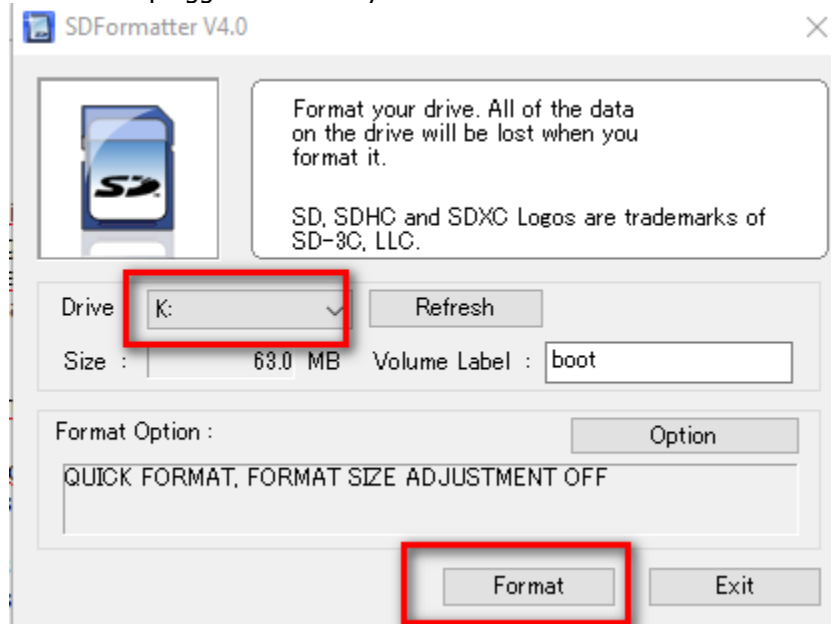
Fig
Click on Format, you will get some warnings, just click OK.
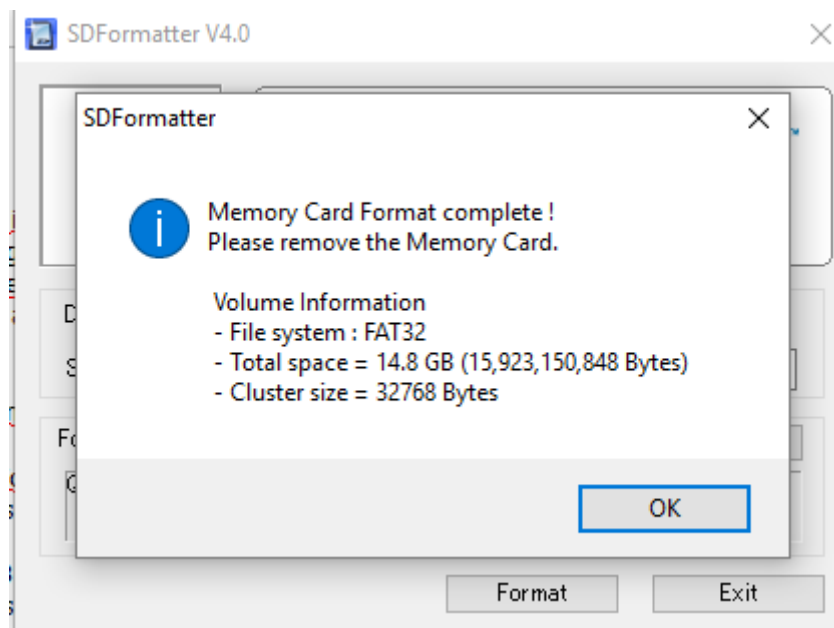
Formatting done. On to the next step.

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
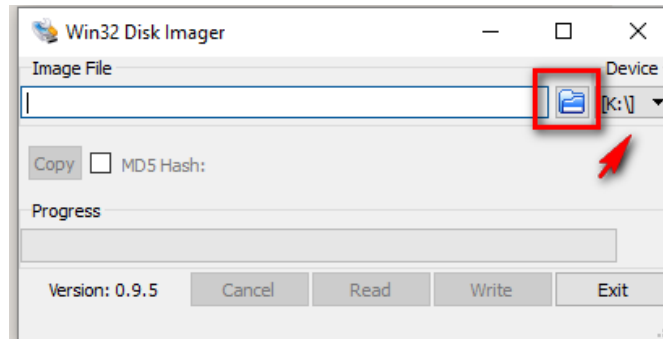
Select the image. If you cant find it on your location, change the Disk Images (*.img *IMG) to *.* and click on open
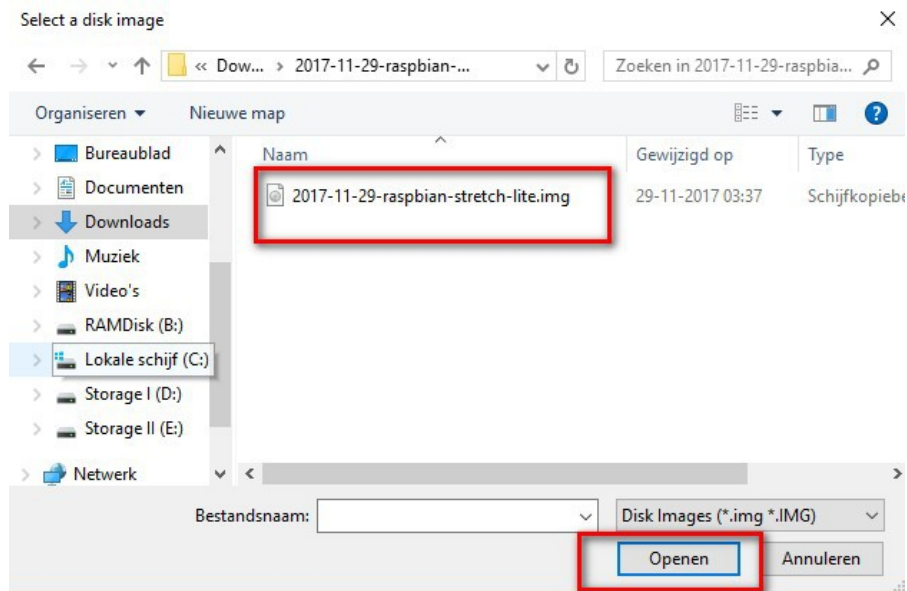
After that the image is selected. Click on Write to burn the image to your SD Card.
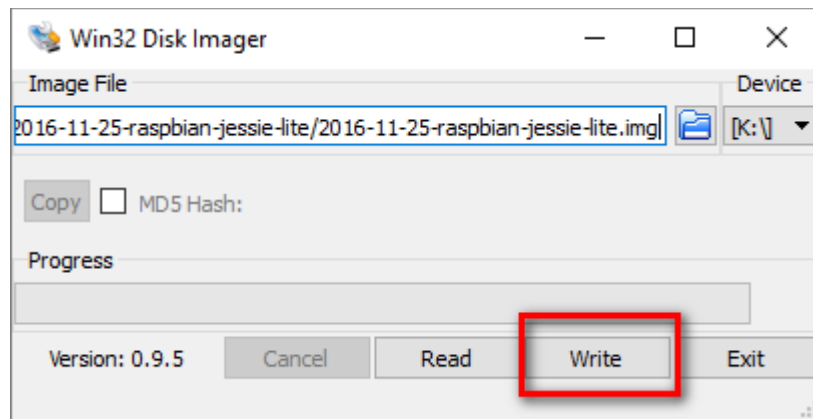
This can take about 5 minutes. Depending on the size of your SD. Get some coffee :D
Sometimes the writing is stuck and nothing happens. Then start over from Step 2. It has happened me quite some times, so don't bother too much about it;)

When you have clicked on Write you will get a warning. Just click OK
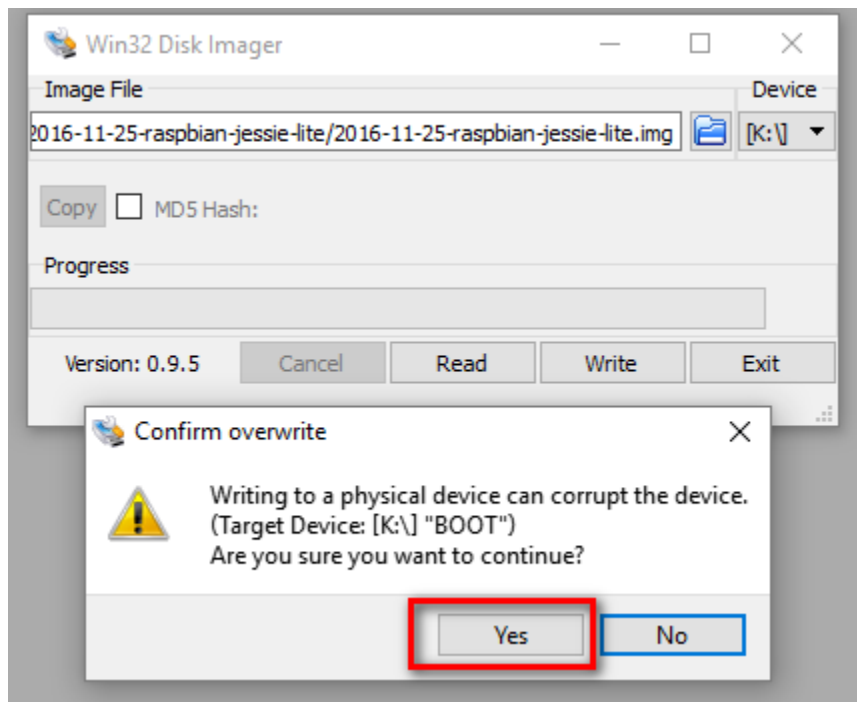
When the writing is done you will get a popup
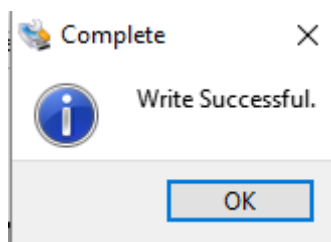
OK. at this point we are not done yet.
Raspberry decided to remove default ssh access to the RPI. And we need SSH.

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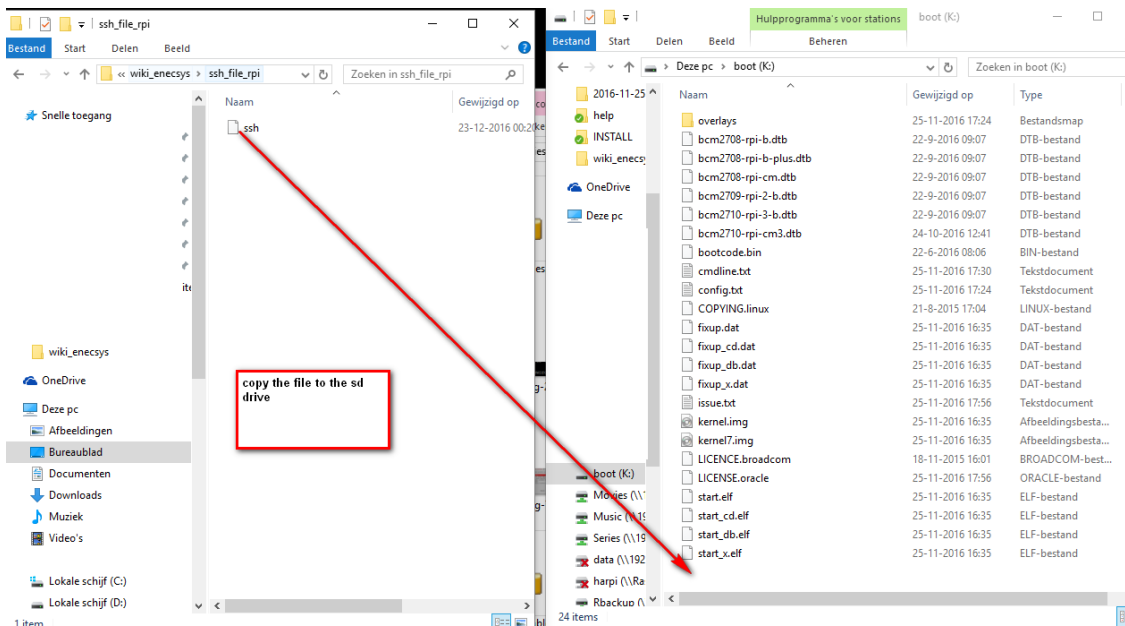
After that you can disconnect the SD Card, stick it in your RPI and power it up and make sure the network cable is connected to your network. It will get an ipaddress automaticly from your router.

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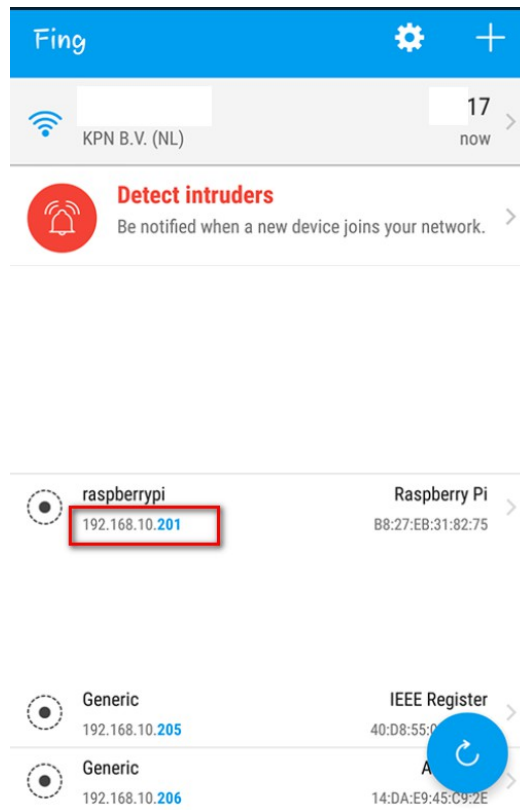
So as soon you have the ipaddress of the RPI we can continue

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 ipadress is 192.168.10.201

the default ssh port is 22 so we need this when connecting
start putty.exe
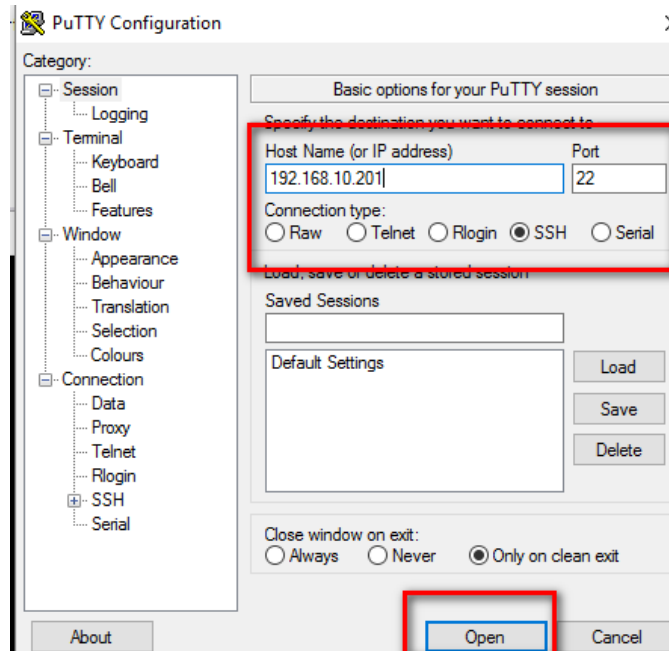
you will get a warning (thats normal). Press Yes/ja
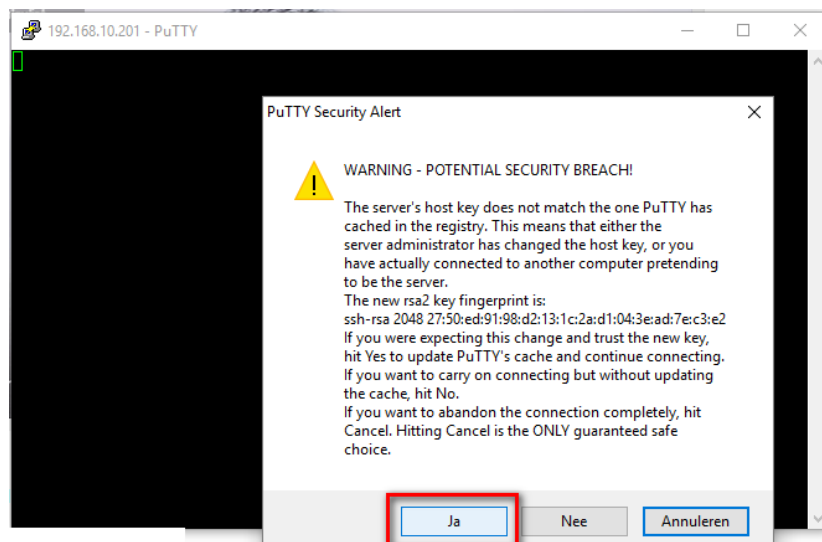
login with the default user and password

login: pi
password: raspberry

done.

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

```
                 | 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 Expand Filesystem

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

         A1 Expand Filesystem  Ensures that all of the SD card storage is available to the OS
         A2 Overscan           You may need to configure overscan if black bars are present on display
         A3 Memory Split       Change the amount of memory made available to the GPU
         A4 Audio              Force audio out through HDMI or 3.5mm jack
         A5 Resolution         Set a specific screen resolution
         A6 GL Driver          Enable/Disable experimental desktop GL driver




                        <Select>                            <Back>

```

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

```
         Root partition has been resized.
         The filesystem will be enlarged upon the next reboot











                                <Ok>
```

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)

```
┤ 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>
```

Set the password

```
    You will now be asked to enter a new password for the pi
    user
```

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

```
    Password changed successfully










                          <Ok>
```

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>
```
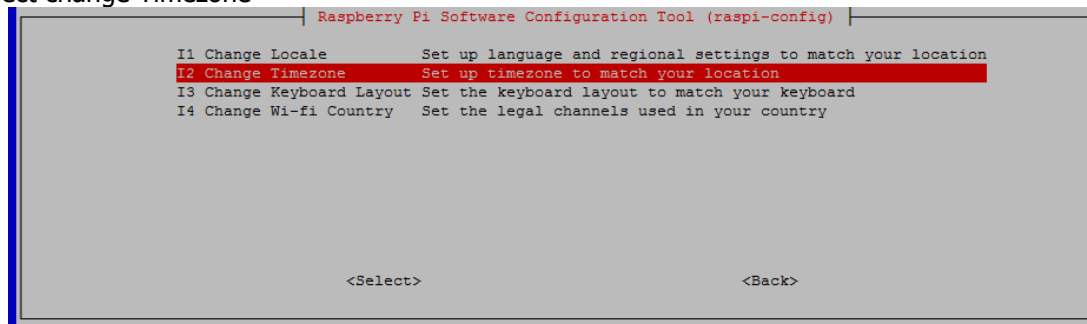
select the next screens to the location where you are

```
┤ Configuring tzdata ├

  Please select the geographic area in which you live. Subsequent configuration questions will narrow this down by p
  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>
```
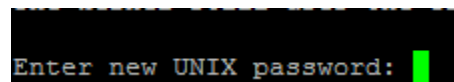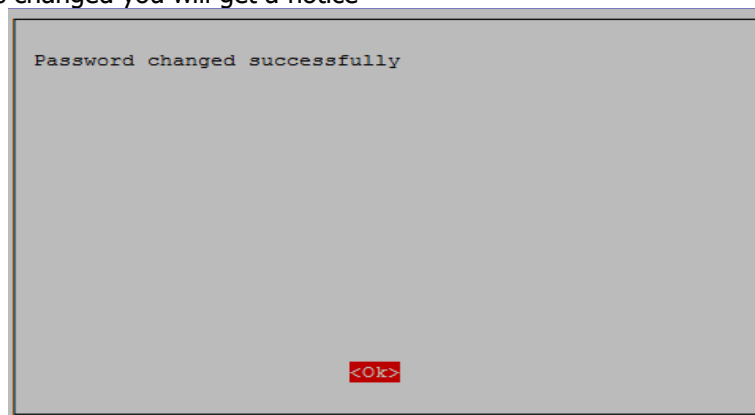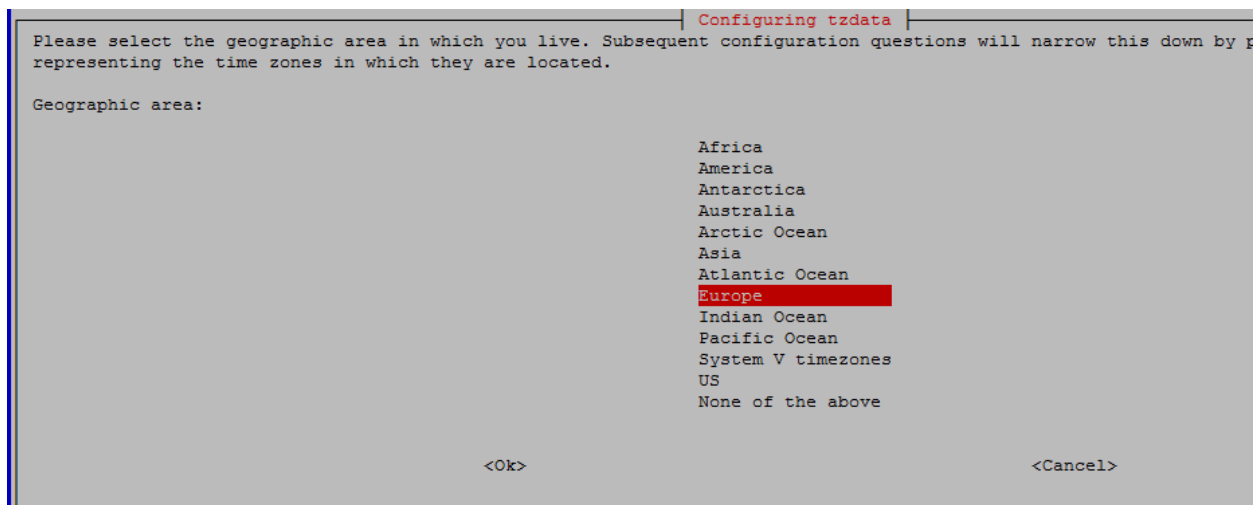
```
┌──────────────────┤ Configuring tzdata ├──────────────────┐
│ Please select the city or region corresponding to your time zone. │
│                                                                   │
│ Time zone:                                                        │
│                                                                   │
│                      Amsterdam        ↑                           │
│                      Andorra          ☐                           │
│                      Astrakhan        ▨                           │
│                      Athens           ▨                           │
│                      Belfast          ▨                           │
│                      Belgrade         ▨                           │
│                      Berlin           ▨                           │
│                      Bratislava       ▨                           │
│                      Brussels         ▨                           │
│                      Bucharest        ▨                           │
│                      Budapest         ▨                           │
│                      Busingen         ▨                           │
│                      Chisinau         ▨                           │
│                      Copenhagen       ▨                           │
│                      Dublin           ▨                           │
│                      Gibraltar        ▨                           │
│                      Guernsey         ▨                           │
│                      Helsinki         ▨                           │
│                      Isle_of_Man      ▨                           │
│                      Istanbul         ▨                           │
│                      Jersey           ▨                           │
│                      Kaliningrad      ▨                           │
│                      Kiev             ▨                           │
│                      Kirov            ▨                           │
│                      Lisbon           ▨                           │
│                      Ljubljana        ▨                           │
│                      London           ▨                           │
│                      Luxembourg       ▨                           │
│                      Madrid           ▨                           │
│                      Malta            ▨                           │
│                      Mariehamn        ▨                           │
│                      Minsk            ▨                           │
│                      Monaco           ▨                           │
```
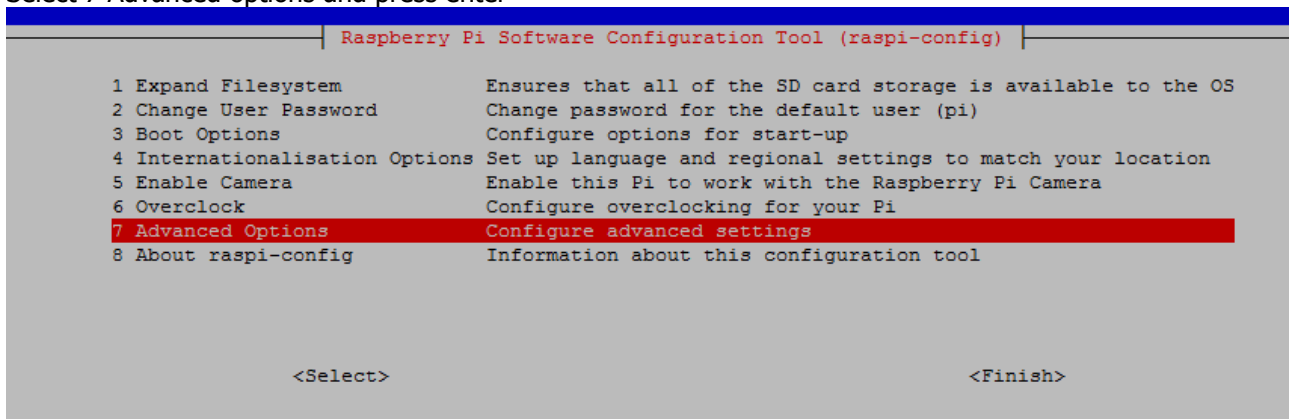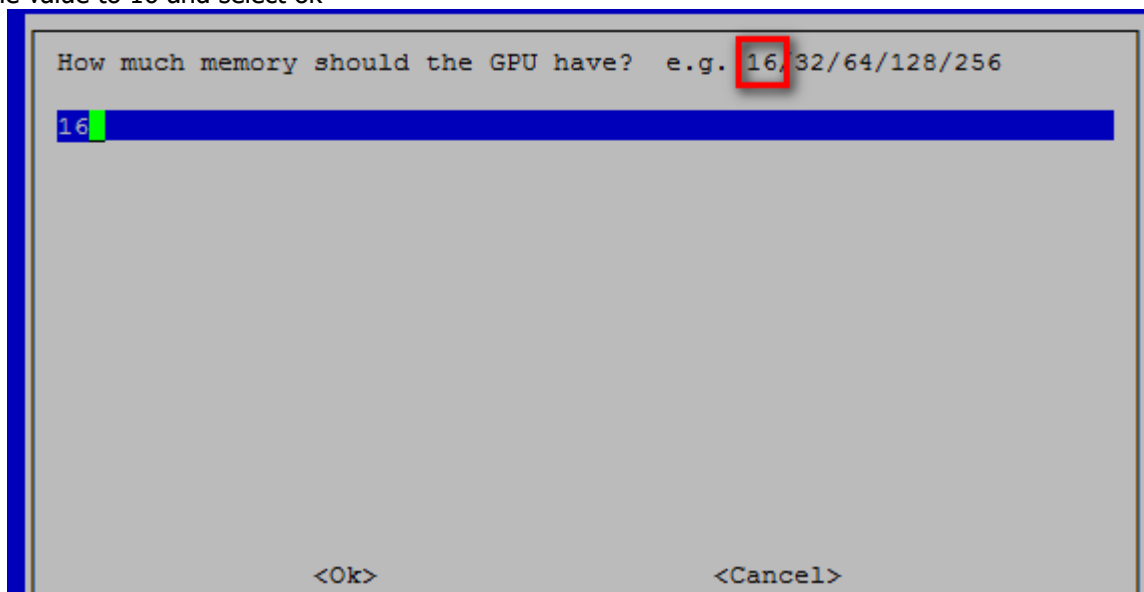
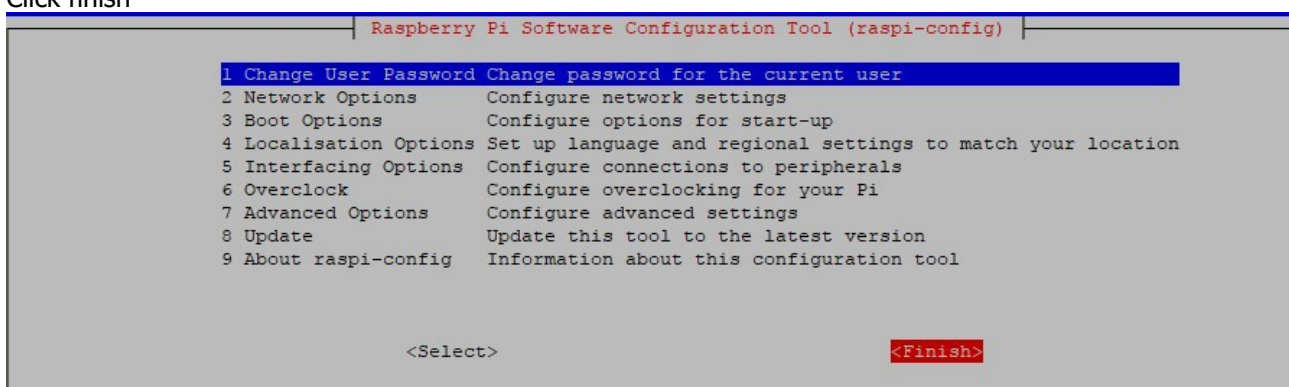and press enter. It will automaticly send you back to the main screen.

Select 7 Advanced options and press enter

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

      1 Expand Filesystem          Ensures that all of the SD card storage is available to the OS
      2 Change User Password       Change password for the default user (pi)
      3 Boot Options               Configure options for start-up
      4 Internationalisation Options Set up language and regional settings to match your location
      5 Enable Camera              Enable this Pi to work with the Raspberry Pi Camera
      6 Overclock                  Configure overclocking for your Pi
      7 Advanced Options           Configure advanced settings
      8 About raspi-config         Information about this configuration tool



                  <Select>                                    <Finish>
```

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

```
How much memory should the GPU have?   e.g. 16/32/64/128/256

16



                  <Ok>                    <Cancel>
```

ok all done.
Click finish

```
┤ 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>
```

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.

First make sure the OS is up-to-date
on the command line do the **sudo apt-get update** and press enter

```
Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Mon Dec 11 17:59:13 2017 from 192.168.10.209
pi@raspberrypi:~ $ sudo apt-get update
```

after that to the same for the upgrade process **sudo apt-get upgrade** and press enter
you will prompted to continue: Press Y and Enter

```
pi@raspberrypi:~ $ sudo apt-get upgrade
Reading package lists... Done
Building dependency tree
Reading state information... Done
Calculating upgrade... Done
The following packages will be upgraded:
  curl dbus iproute2 libcurl3 libcurl3-gnutls libdbus-1-3 li
  raspi-config ssh tzdata
18 upgraded, 0 newly installed, 0 to remove and 0 not upgrad
Need to get 14.8 MB of archives.
After this operation, 1,024 B disk space will be freed.
Do you want to continue? [Y/n]
```

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, i had to use another one, because i created the documentation first before i uploaded the code

Download the Installer first
wget https://raw.githubusercontent.com/nlmaca/Enecsys_Dashboard/master/INSTALL_SCRIPTS/installer.sh

```
pi@raspberrypi: ~                                                    —  □  ×
pi@raspberrypi:~ $ wget https://raw.githubusercontent.com/nlmaca/Enecsys_Dashboard/master/INSTALL_SCRIPTS/installer.sh
```

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

```
pi@raspberrypi:~ $ ls
1.sudo_static_ip.sh          3.sudo_create_database.sh  5.install_dashboard_cron.sh  installer.sh
2.sudo_install_webserver.sh  4.sudo_addsudoers.sh        6.sudo_clean_install.sh
pi@raspberrypi:~ $
```

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

STEP 8

Time to set a static ipadress to your RPI. This script will set the current ipadress to a static one. Just run the script, you don't have to set the ipadress 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 ipadress yourself then skip this step (8)

Run the command WITH SUDO!!
sudo ./1.LAN_static_ip_v4.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:~ $
```

Reboot the RPI so changes take place

command: 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 and install the mysql server, webserver, php, phpmyadmin

Raspbian stretch 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 and set a new mysql root password.

Needed:
use this url to generate a random password:
https://www.random.org/passwords/?num=1&len=15&format=html&rnd=new

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 won't be stored and you need it in the next installation, also store it in your password vault

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

```
┤ Configuring phpmyadmin ├
 Please choose the web server that should be automatically configured to run
 phpMyAdmin.

 Web server to reconfigure automatically:

    [ ] apache2
    [ ] lighttpd




                              <Ok>

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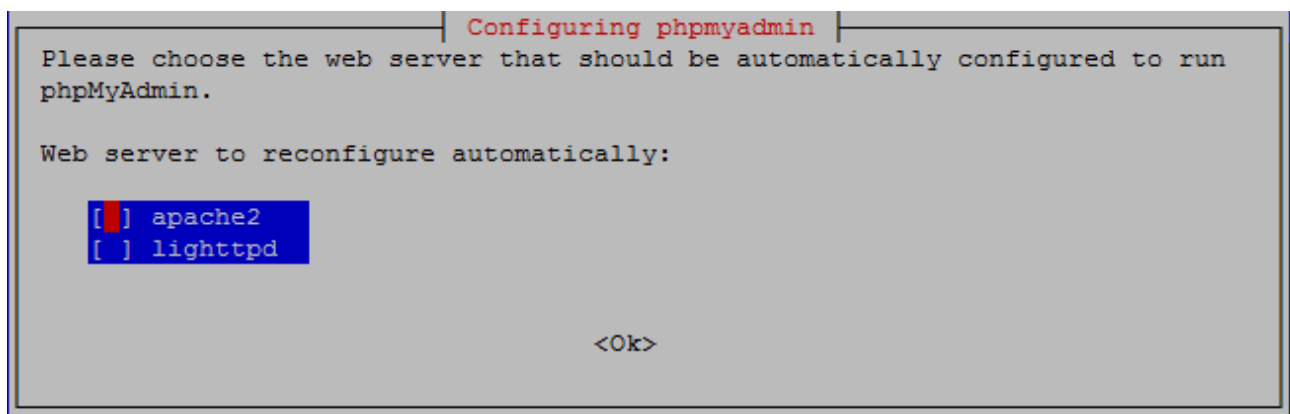
next question is for phpmyadmin. Select no
press Tab, then ENTER to confirm

```
┤ Configuring phpmyadmin ├

The phpmyadmin package must have a database installed and configured before it
can be used.  This can be optionally handled with dbconfig-common.

If you are an advanced database administrator and know that you want to perform
this configuration manually, or if your database has already been installed and
configured, you should refuse this option.  Details on what needs to be done
should most likely be provided in /usr/share/doc/phpmyadmin.

Otherwise, you should probably choose this option.

Configure database for phpmyadmin with dbconfig-common?

                    <Yes>                              <No>
```

At the end all services will be restarted and you new MySQL root password will be displayed in your screen.
 "--"
"Copy this new Mysql Root password and keep it in a safe place:"
MYSQL_ROOT_PASSWORD
"Installation Done! > Go to script No 3 "

STEP 10
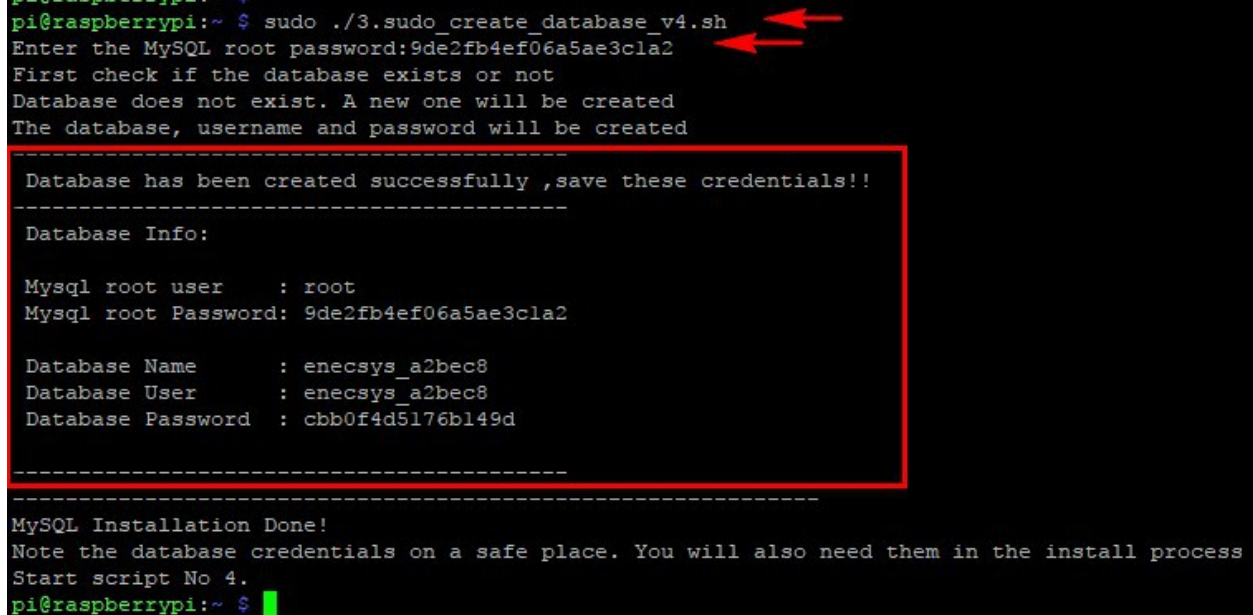
I rebuild this script so a database is created with a prefix and random second part. Username and password are also pre-generated and displayed after installation is done. Al you need is to set the mysql ROOT password you have got in the previous step

Requirements: mysql root password standby

So. start the script again WITH SUDO
sudo ./3.sudo_create_database_v4.sh

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

```
pi@raspberrypi:~ $ sudo ./3.sudo_create_database_v4.sh
Enter the MySQL root password:9de2fb4ef06a5ae3cla2
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
-----------------------------------------
 Database has been created successfully ,save these credentials!!
-----------------------------------------
 Database Info:

 Mysql root user     : root
 Mysql root Password: 9de2fb4ef06a5ae3cla2

 Database Name       : enecsys_a2bec8
 Database User       : enecsys_a2bec8
 Database Password   : cbb0f4d5176b149d

-----------------------------------------
-------------------------------------------------------------
MySQL Installation Done!
Note the database credentials on a safe place. You will also need them in the install process
Start script No 4.
pi@raspberrypi:~ $
```

Ok. installation went without problems. The database is created

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 automaticly :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 donload 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
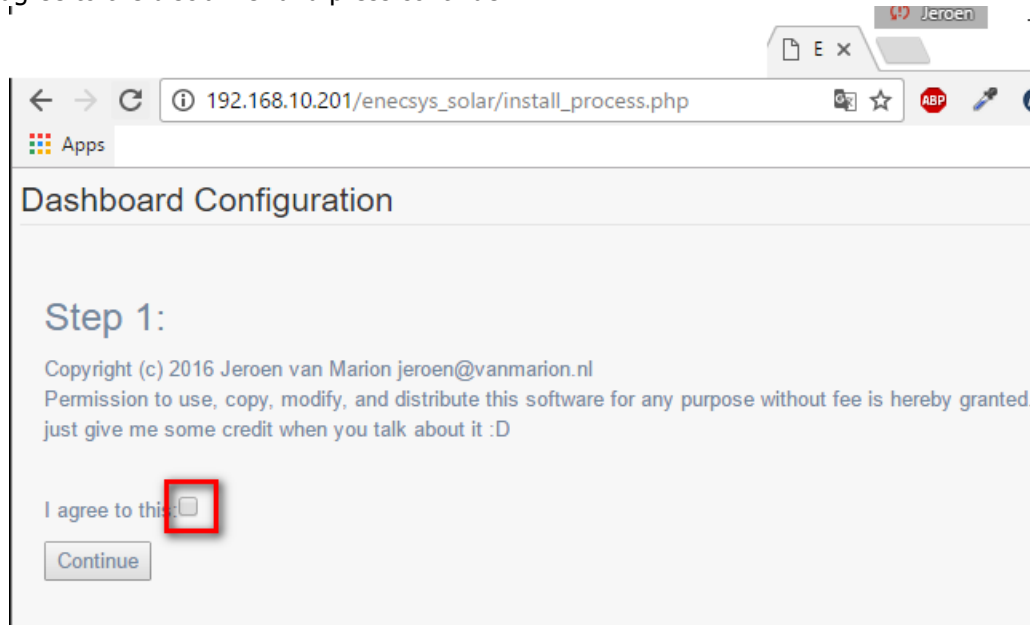
next it will check if the config file is writable. If green press next
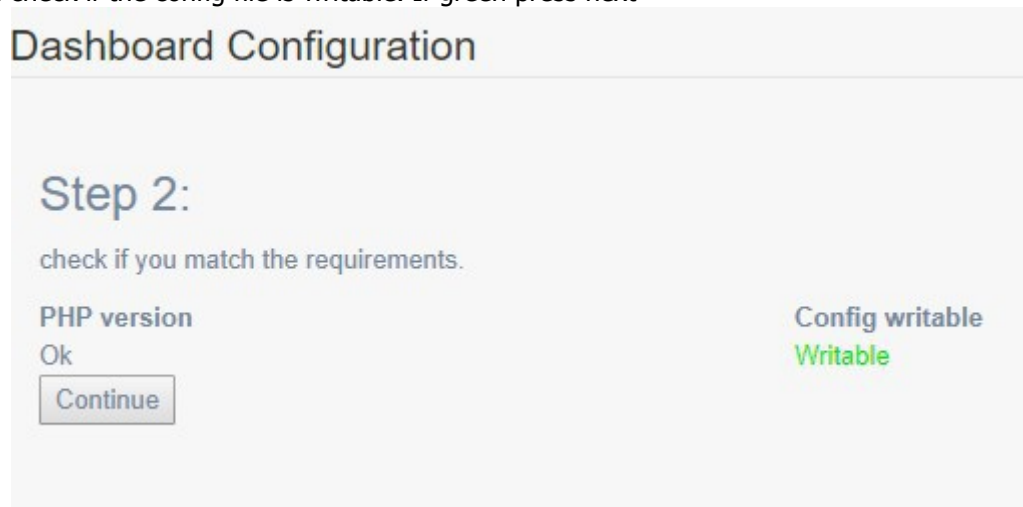
Next screen is where we have to set the database credentials you have set in STEP 10

You only have to set:
  – Database Name
  – Database UserName
  – Database Password

ok. almost done. Below will show a link you can click to go to your dashboard.

The default credentials are:
username: admin
password: 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)

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 ipadresses when you reboot your router.

Go to the ipadress 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

After that Apply New settings.

Ok almost done. Time to go the dashboard to input your inverters, and configure all the settings

STEP 16

Dashboard configuration
Almost done. There are 2 pages you have to edit in the dashboard. Login in your browser with the url you got from step 10

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: ℹ	0
Total Inverters: ℹ	0
PVOutput Apikey:	apikey
PVOutput System ID:	0
Lifetime: ℹ	0
Mode: ℹ	AGGREGATE
Extended: ℹ	0
AC: ℹ	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:	Celcius
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

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