

mySCADA on Raspberry PI

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1 DOWNLOAD THE IMAGE

Official images are available to download from the mySCADA website:

<http://www.smarthouse.cloud/downloads/>

1.1 LINUX AND MAC OS

- `myscada / # mkdir ~/myscada`
- `myscada / # cd ~/myscada`
- `myscada myscada # wget http://www.smarthouse.cloud/download/SW/PI/raspbian-myscada-jessie.tar.gz`
- `myscada myscada # tar xvf ./raspbian-myscada-jessie.tar.gz`

2 WRITING AN IMAGE TO THE SD CARD

2.1 LINUX:

Please note that the use of the `dd` tool can overwrite any partition of your machine. If you specify the wrong device in the instructions below you could delete your primary Linux partition. Please be careful.

- Run `df -h` to see what devices are currently mounted.
- If your computer has a slot for SD cards, insert the card. If not, insert the card into an SD card reader, then connect the reader to your computer.
- Run `df -h` again. The new device that has appeared is your SD card. The left column gives the device name of your SD card; it will be listed as something like `/dev/mmcblk0p1` or `/dev/sdd1`. The last part (`p1` or `1` respectively) is the partition number but you want to write to the whole SD card, not just one partition. Therefore you need to remove that part from the name (getting, for example, `/dev/mmcblk0` or `/dev/sdd`) as the device for the whole SD card. Note that the SD card can show up more than once in the output of `df`; it will do this if you have previously written a Raspberry Pi image to this SD card, because the Raspberry Pi SD images have more than one partition.
- Now that you've noted what the device name is, you need to unmount it so that files can't be read or written to the SD card while you are copying over the SD image.
- Run `umount /dev/sdd1`, replacing `sdd1` with whatever your SD card's device name is

(including the partition number).

- If your SD card shows up more than once in the output of `df` due to having multiple partitions on the SD card, you should unmount all of these partitions.
- In the terminal, write the image to the card with the command below, making sure you replace the input file `if=` argument with the path to your `.img` file, and the `/dev/sdd` in the output file `of=` argument with the right device name. This is very important, as you will lose all data on the hard drive if you provide the wrong device name. Make sure the device name is the name of the whole SD card as described above, not just a partition of it; for example `sdd`, not `sdds1` or `sddp1`; or `mmcblk0`, not `mmcblk0p1`.

```
myscada myscada # dd bs=4M if= 2016-02-26-raspbian-jessie.img of=/dev/sdd
```

- Please note that block size set to 4M will work most of the time; if not, please try 1M, although this will take considerably longer.
- Also note that if you are not logged in as root you will need to prefix this with `sudo`.
- The `dd` command does not give any information of its progress and so may appear to have frozen; it could take more than five minutes to finish writing to the card. If your card reader has an LED it may blink during the write process. To see the progress of the copy operation you can run `pkill -USR1 -n -x dd` in another terminal, prefixed with `sudo` if you are not logged in as root. The progress will be displayed in the original window and not the window with the `pkill` command; it may not display immediately, due to buffering.
- Instead of `dd` you can use `dcfldd`; it will give a progress report about how much has been written.
- You can check what's written to the SD card by `dd`-ing from the card back to another image on your hard disk, and then running `diff` (or `md5sum`) on those two images. There should be no difference.
- Run `sync`; this will ensure the write cache is flushed and that it is safe to unmount your SD card.
- Remove the SD card from the card reader.

2.2 WINDOWS

Insert the SD card into your SD card reader and check which drive letter was assigned. You can easily see the drive letter (for example G:) by looking in the left column of Windows Explorer. You can use the SD Card slot (if you have one) or a cheap SD adaptor in a USB port.

- Download the Win32DiskImager utility from the sourceforge.net/projects/win32diskimager/ (it is also a zip file); you can run this from a USB drive.
- Extract the executable from the zip file and run the Win32DiskImager utility; you may need

- to run the utility as administrator. Right-click on the file, and select **Run as administrator**.
- Select the image file you extracted above.
 - Select the drive letter of the SD card in the device box. Be careful to select the correct drive; if you get the wrong one you can destroy your data on the computer's hard disk! If you are using an SD card slot in your computer and can't see the drive in the Win32DiskImager window, try using a cheap SD adaptor in a USB port.
 - Click Write and wait for the write to complete.
 - Exit the imager and eject the SD card.

2.3 Mac OS

If you are comfortable with the command line, you can image a card without any additional software. Run:

```
diskutil list
```

- Identify the disk (not partition) of your SD card e.g. disk4 (not disk4s1):

```
diskutil unmountDisk /dev/<disk# from diskutil>
```

```
e.g. diskutil unmountDisk /dev/disk4
```

```
sudo dd bs=1m if=image.img of=/dev/DISK
```

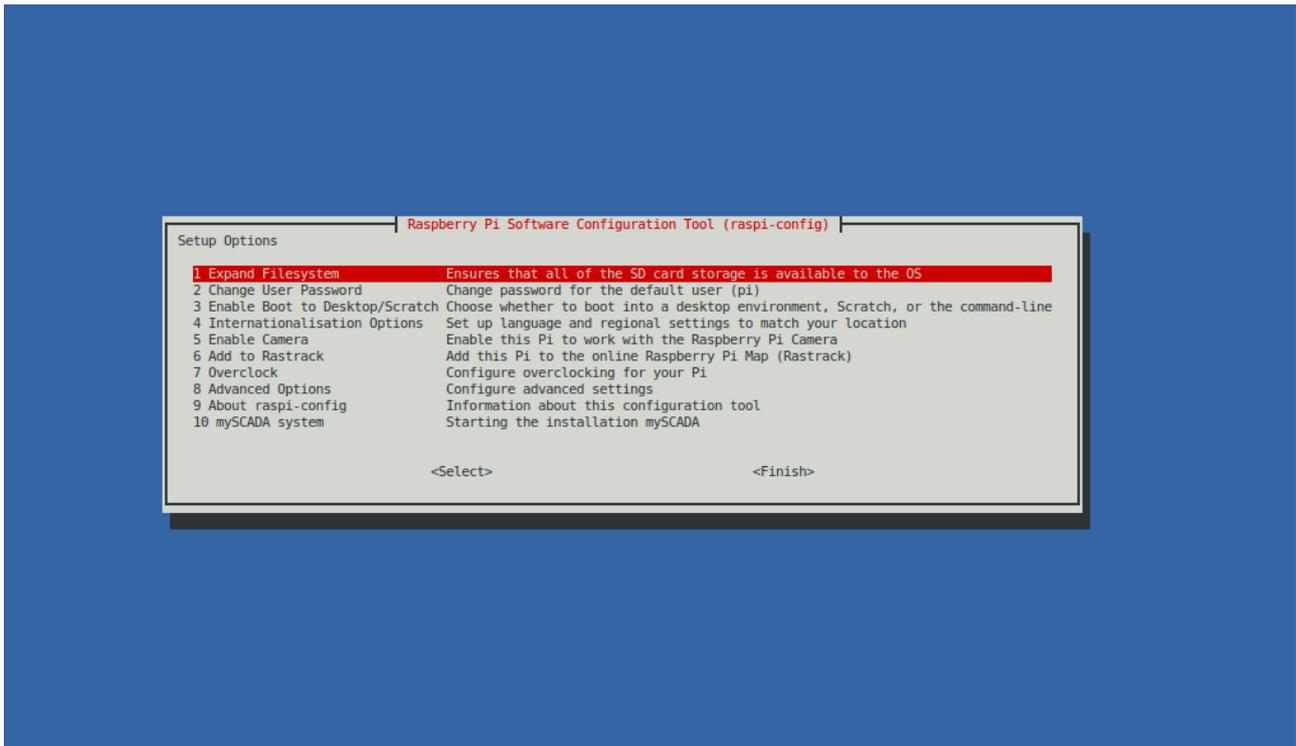
```
e.g. sudo dd bs=1m if=2016-02-26-raspbian-jessie.img  
of=/dev/disk4
```

This may result in an `dd: invalid number '1m'` error if you have GNU coreutils installed. In that case you need to use `1M`:

```
sudo dd bs=1M if=image.img of=/dev/DISK
```

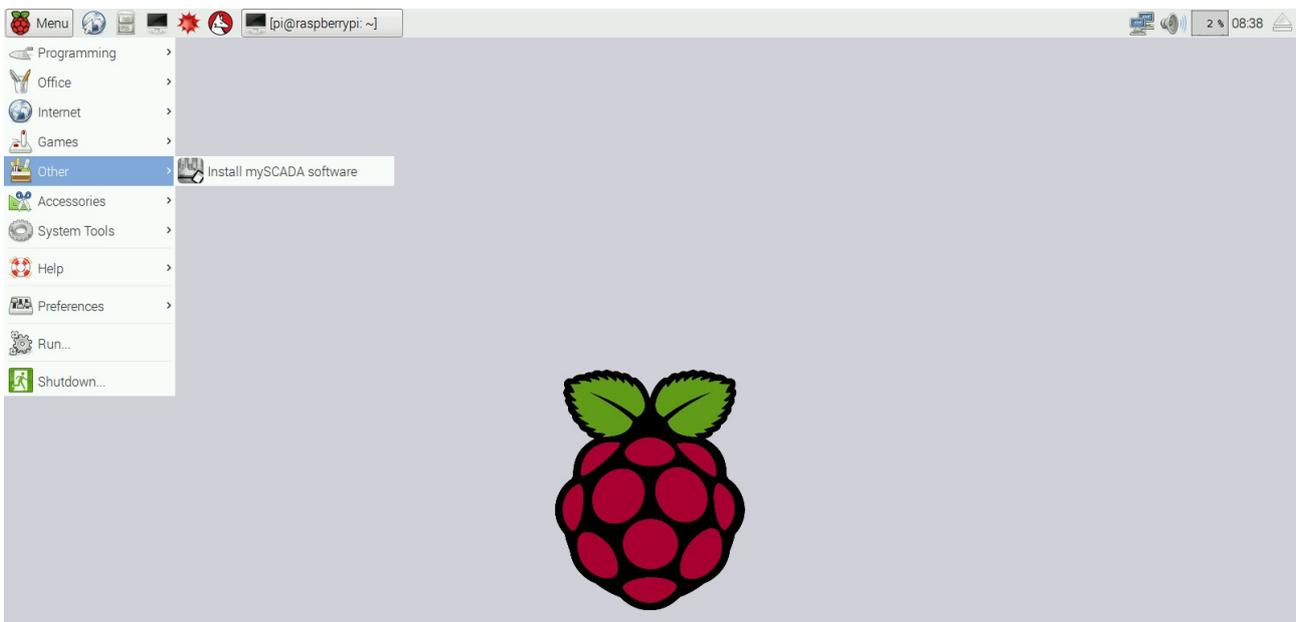
This will take a few minutes.

3 FIRST BOOT



Raspbian Wheezy

After first boot you will see raspi-config screen. Select option 10 (myscada system). Wait for installation will be finished. After installation you will be asked for reboot system.

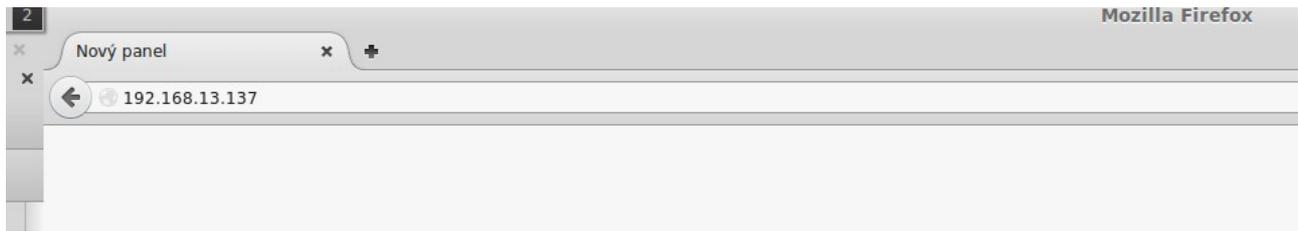


Raspbian Jessie

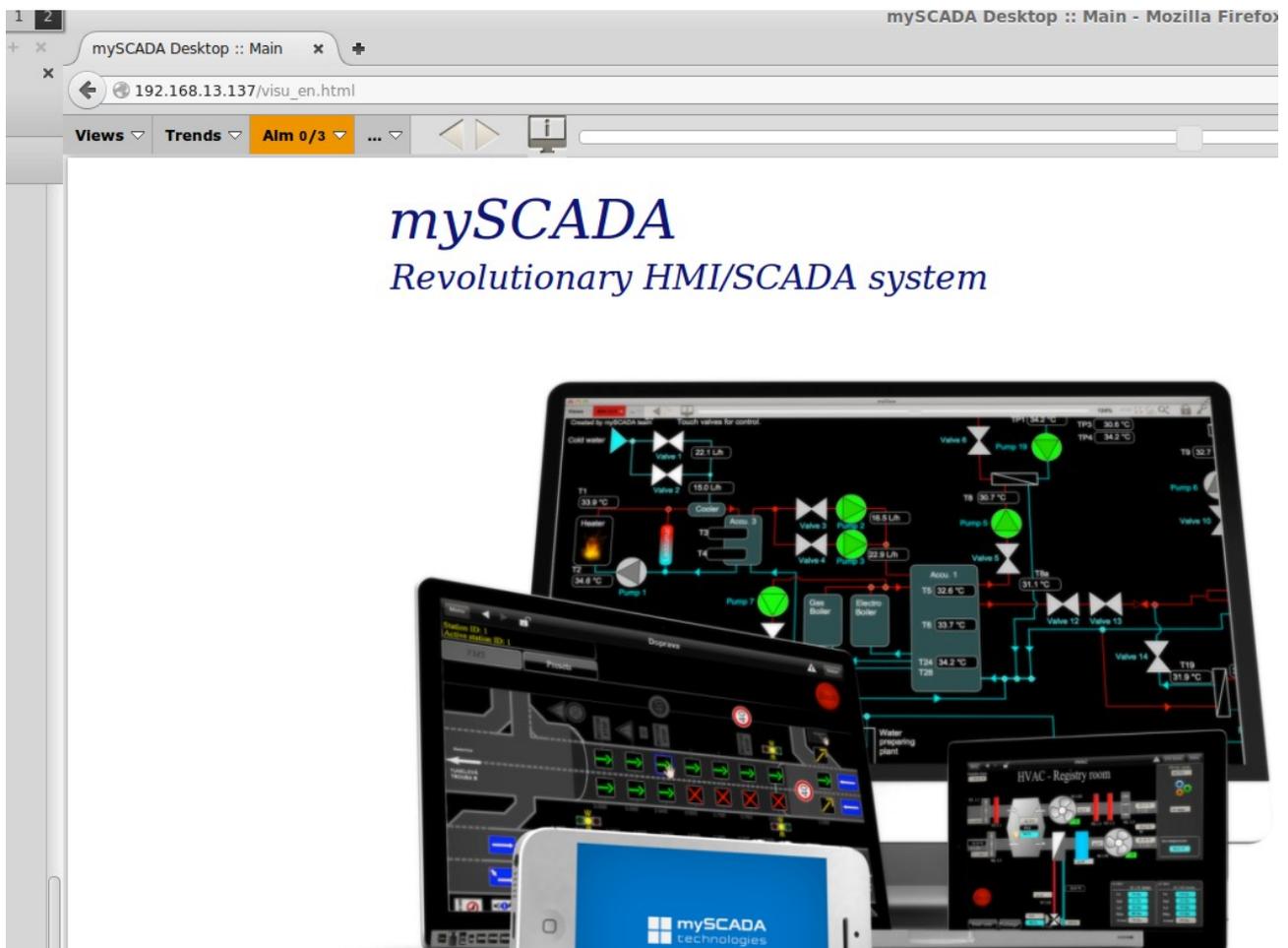
After first boot you will run installation process from "Menu/Other".

4 CORRECT INSTALLATION TEST

Run on another PC Web browser and enter into field address the IP of raspberry.



If mySCADA is ready you will see follows.



5 DOWNLOADS, MANUALS

Download from <http://www.smarthouse.cloud/downloads>

-myPROJECT Designer

- manuals.