WPM SDK manual

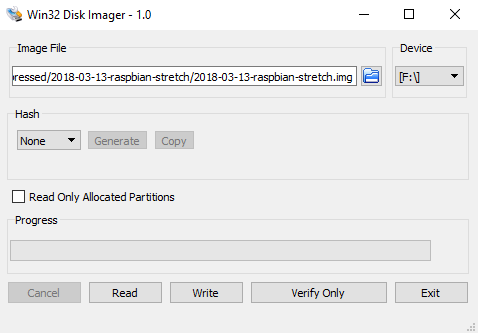
Version 04182018.

Cr. Chatpeth

# Raspberry Pi

## Get started with Raspberry pi.

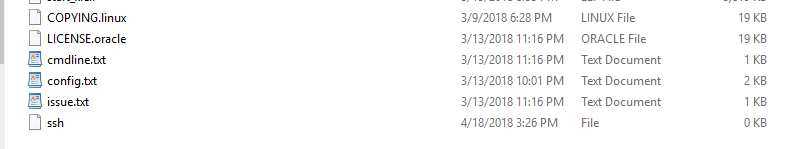
1. Preparing Raspberry pi board, SD card and card reader.
2. Download Raspbian OS from <https://www.raspberrypi.org/downloads/raspbian/>
3. Install SD card writing program e.g. [win32DiskImager](https://sourceforge.net/projects/win32diskimager/) on Windows.
4. Extract Raspbian file, you will get \*.img file.
5. Run win32DiskImager, put SD card on your computer select device, \*.img file then start writing.



1. After writing success, remove the SD card, put in to raspberry pi.

You will get Raspberry Pi with Raspbian OS. If you have screen, mouse and keyboard you can use like general linux. In the case of without screen please follow step below.

1. Create new file without extension on PC, give file name as ssh (Be sure you don’t add any extention like \*.txt or any)
2. Copy the ssh file to the SD card.



1. Remove the SD card from PC and put into Raspberry Pi.
2. Plug power and Ethernet to them. (Make it in the same LAN with your PC)
3. Run ssh remote program e.g. [putty](https://www.putty.org/) to remote to Raspbian.

Now, you can use the raspberry pi with linux base command. If you prefer to use remote desktop, please follow the step below which will guide you to VNC server installation for remote desktop to the Raspbian.

1.Enable VNC server

On your Raspberry Pi, run the following commands to make sure you have the latest version of VNC Connect.

sudo apt-get update

sudo apt-get install realvnc-vnc-server realvnc-vnc-viewer

You can enable VNC Server at the command line using raspi-config.

sudo raspi-config

Now, enable VNC Server by doing the following:

* Navigate to Interfacing Options.
* Scroll down and select VNC > Yes.

Connecting to your Raspberry Pi with VNC Viewer

ESTABLISHING A DIRECT CONNECTION

Direct connections are quick and simple providing you're joined to the same private local network as your Raspberry Pi. For example, this might be a wired or wireless network at home, at school, or in the office).

On your Raspberry Pi (using a terminal window or via SSH) use these instructions or run ifconfig to discover your private IP address.

On the device you'll use to take control, download VNC Viewer. For best results, use the compatible app from RealVNC.

Enter your Raspberry Pi's private IP address into VNC Viewer.

The default username and password are pi, raspberry.

## Install npm.

All new Raspbian OS install node-red, node.js by default. You just install NPM by yourself, for install additional node to node-red api.

Run following command:

sudo apt-get install nodejs npm

## Running on Node-Red.

sudo node-red-start //Start node-red

sudo node-red-stop //stop node-red

Access node-red API

<Raspberry pi ip address>:1880

Editor & Admin API security

The Editor and Admin API supports two types of authentication:

username/password credential based authentication

since Node-RED 0.17: authentication against any OAuth/OpenID provider such as Twitter or GitHub

Username/password based authentication

To enable user authentication on the Editor and Admin API, add the following to your settings.js file: (cd $HOME/pi/.node-red)

adminAuth: {

type: "credentials",

users: [{

username: "admin",

password: "$2a$08$zZWtXTja0fB1pzD4sHCMyOCMYz2Z6dNbM6tl8sJogENOMcxWV9DN.",

permissions: "\*"

}]

}

Username: admin, Password: password

Generating the password hash

To generate a suitable password hash, you can use the node-red-admin command-line tool:

node-red-admin hash-pw

Setup node-red to auto start on boot:

sudo systemctl enable nodered.service

## Install additional palette

1. node-red-dashboard
2. node-red-contrib-netpie
3. node-red-contrib-firebase
4. node-red-contrib-aggregator