

# User Manual and Deployment Instructions

## 1 System Setup

### 1.1 Raspberry Pi OS

1. The latest stable version of the software is available from <http://robohome.co.uk>. Alternatively, the current development release can be found at <https://github.com/michboon/comp2014>
2. Download the ISO and use a tool such as Win32DiskImager (<http://sourceforge.net/projects/win32diskimager/>) to write the image to a SD card for the Raspberry Pi<sup>1</sup>
3. Connect the Raspberry Pi to your home router and a power source

### 1.2 Router Configuration

For usage of the cloud service and remote access, you must forward ports on your router to port 9090 on the Raspberry Pi. Instructions specific to your brand of router are available at [http://portforward.com/english/routers/port\\_forwarding/](http://portforward.com/english/routers/port_forwarding/). For easy use, it is suggested that you forward incoming requests on port 80 to port 9090 on the Raspberry Pi.

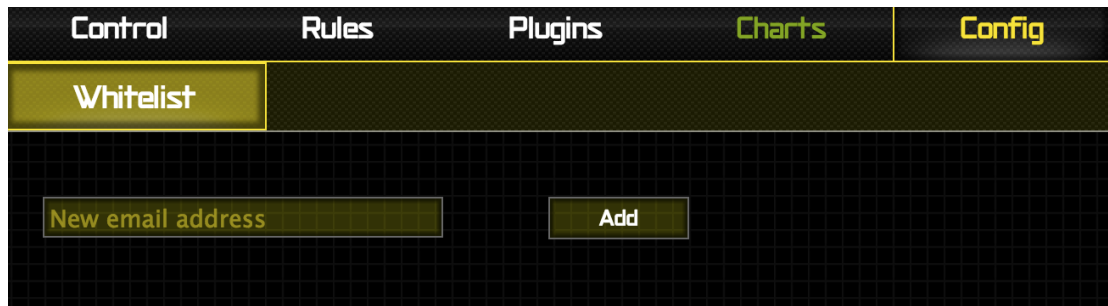
It is recommended that each new module you add to the system be given a static IP on your local network. Please see the documentation for your router for instructions on how to do this. Afterwards, make a note of the IP of your Raspberry Pi.

### 1.3 Connecting to the system for the first time

1. Open a web browser on your local network and enter the address <http://<RaspberryPiIP>:9090> and you will be taken to the start page on the Raspberry Pi. You can use this address whenever you are connected to your local network to access the system without any need for logging in
2. For remote access, you should use your public IP address (<http://www.whatismyip.com/>) with the correct port as configured for your router earlier
3. **IMPORTANT:** If you have forwarded your ports, you should access the system through your public IP as part of the setup. You will be asked to login with you Google account and automatically registered as the first user for the system. Any further users will need to be added to the whitelist before being allowed to register
4. New emails for OpenID registration can be added under Config -> Whitelist:

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<sup>1</sup> Due to GitHub binary file restrictions, we were unable to host the image. Instead, setup scripts are provided which will turn a fresh Arch Linux install into the correct state. Given ample hosting, we would then host an image of this.



## 2 Hardware Setup

### 2.1 Adding new items

Once you have correctly configured new hardware, you can add it through the user interface. Under the “Control” tab, go to the tab for the room you wish to add it to and fill in the appropriate fields on the left side of the screen. Be sure to select the correct brand of hardware as this is an important part of how the system will interact with it.

Below are instructions for setting up our currently supported hardware. If you are using newer hardware with an updated version of the software then please see the relevant documentation for new hardware support.

### 2.2 Belkin WeMo

1. Connect the WeMo to your home network as described in the WeMo instructions at <http://www.belkin.com/us/support-article?rnId=7073>
2. Give each WeMo an IP address with your router

### 2.3 LightwaveRF

1. Connect the LightwaveRF hub to your router
2. Go to <http://www.lightwaverf.com/my-lightwave> and set up the hub accordingly
3. Add any new LightwaveRF hardware to the hub as specified in their documentation
4. When a new piece of hardware is added make note of the Room ID and Device ID you give it in the manager
5. To add this into the RoboHome system you should use the IP of the hub followed by the Room ID and Device ID (e.g. 192.168.0.1:R1D1 for room 1, device 1)

### 2.4 Arduino and Gadgeteer

Software for Arduino and Gadgeteer modules should only be used by users who are familiar with these boards and is available from:

<https://github.com/michboon/comp2014/tree/master/hardware>

### 2.5 Testing

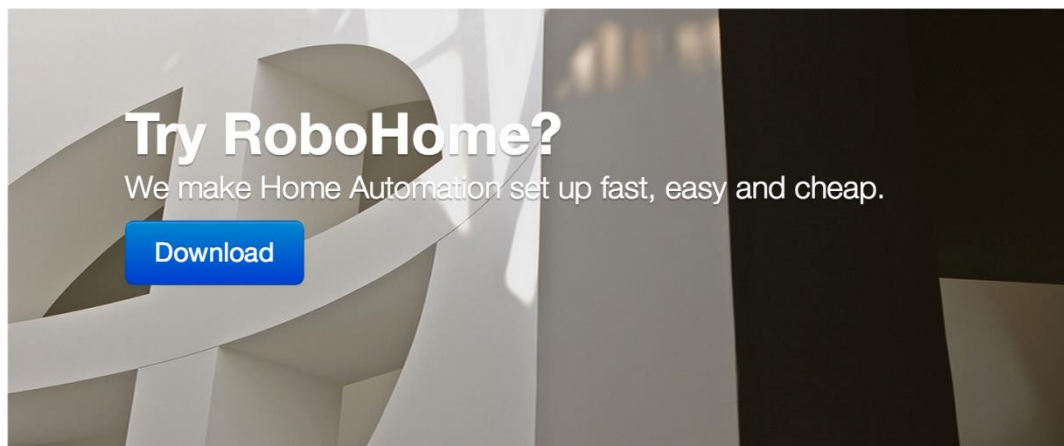
After all the items have been added, it is recommended that you check if everything is working. This can be simply done by clicking on each button and checking if the result is as expected. If it is not, please first check that the item is of the right type, brand and IP. If that is the case, then it is likely that there is a hardware fault. If after this there is still a problem, please report the issue to us.

### 3 Cloud Service

The RoboHome cloud service is accessible through <http://robohome.co.uk>



Home	My Account	Documentation	Downloads	About	Help
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#### Login with OpenID

Login with your Google account to manage your home.



#### Register

Register a google account to get started.

Register Now

#### Download

Download and get it running now.

Download

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Once you have logged into an account, add a new Raspberry Pi by clicking on the orange button below. Then enter the IP address of the Raspberry Pi and give it a name.

Add a new RPi

IP Address:

Ex: 192.168.0.1

Leave "name" empty if adding existing RPi.

Name:

Ex: Home 1

Close

Submit

Add a new RPi

#	Name	Status	IP Address	Action
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## 4 The RoboHome Interface

3:23 AM

Friday

26 April 2013

Room manager

Add new room

Room name

Add

Remove this room (Lounge)

Confirm this room's name

Remove

Item manager

Add

Item's name

Item's static IPV4 address

mock

Add

Remove

Lounge Curtain

Confirm this item's name

Remove

Control

Rules

Plugins

Charts

Config

Lounge

Kitchen

Bathroom

Bedroom 1

Bedroom 2

Office

Curtain

Lounge Curtain

192.168.0.101

opened

Motion Sensor

Lounge Motion

192.168.0.102

motion detected

Plug

Radio

192.168.0.103

on

Light

Wi-Fi Light

192.168.0.100-R1-D1

off

Door

Door

192.168.0.23

opened

Light Sensor

Light sensor 2

192.168.0.105

light

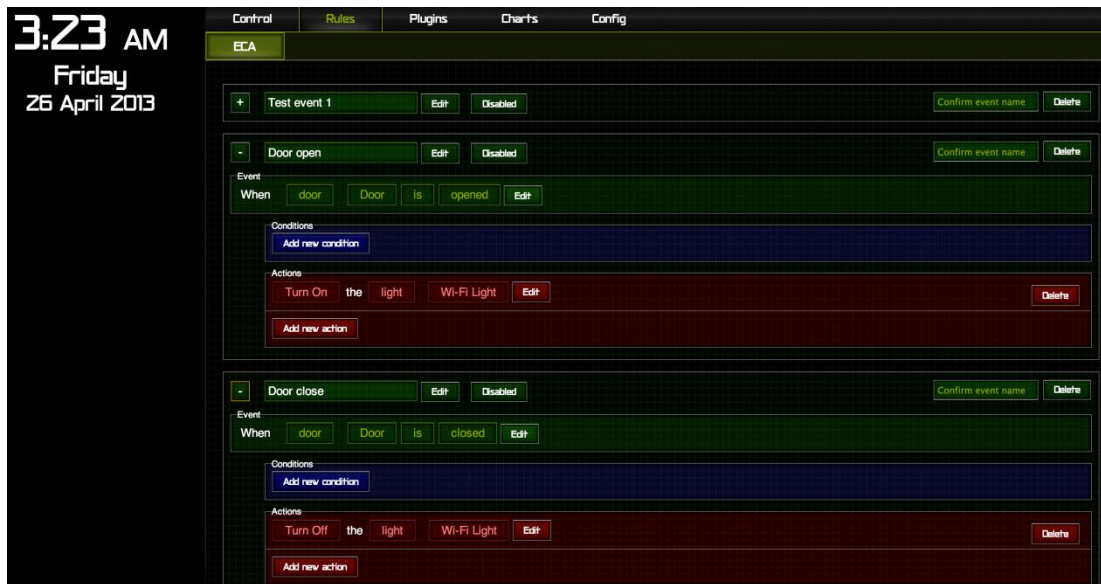
### 4.1 Adding and deleting rooms

1. Go to the "Control" tab
2. To add a new room, add a new name in the "Room Manager" on the left and click "Add"
3. To delete a room, go to the tab of that room and confirm its name to the left of the "Delete" button in the "Room Manager"

### 4.2 Rules

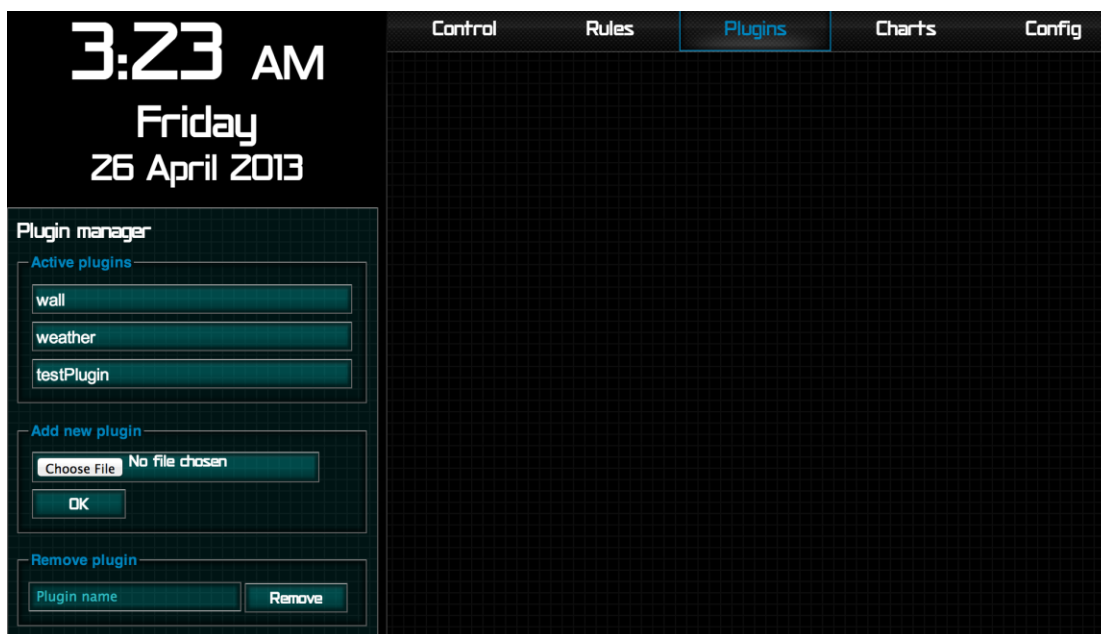
Rules can be added under the "Rules" tab. At the bottom of the page, you can create a new event by clicking the 'Add New Rule' button. After creating an event, add conditions and actions for further customisation.

If you wish to disable a rule, you can do so by clicking toggling the "Enabled" button. If you want to delete it permanently, then first type in the Event name and then click 'Delete' at the right hand side of the page.



### 4.3 Plugins

Plugins can be uploaded and accessed through the “Plugins” tab. Please see the relevant documentation for installing and using a plugin. Some example plugins are included by default and can be deleted by confirming the plugin name and selecting “Delete”.



### 4.4 Energy Usage

You can check your energy usage by looking in the “Charts” tab providing that you have an energy monitor installed and configured with the system.

3:23 AM  
Friday  
26 April 2013

