Instruction manual for PowerCloud

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September 11, 2016

1 Compiling and Installing from Source Code

1.1 Pre-requisites

Software Before proceeding please ensure you have the following software installed on your system:

- NodeJS and NPM

- Bower

- Gulp

- Particle Dev

- Java 8

- Maven

  Hardware

- A Particle Photon.

- A computer with internet access which does not block incoming and outgoing connections on port 1883 and 80.

1.2 Firmware

Compile and flash the photon with the following commands, please take note that if you run the application server on a local machine, retrieve the IP address and insert it into the firmware's code as shown below.

```
// Callback signature for MQTT subscriptions.
void callback(char* topic, byte* payload, unsigned int length);

// MQTT client.
byte PC_BROKER[] { 178,62,75,151 };
MQTT client(PC_BROKER, 1883, callback);

void callback(char* topic, byte* payload, unsigned int length) {
    Serial.println("Command received:");
    Serial.println((char*)payload);
};
```

Follow the instructions here in order to compile the firmware using Particle Dev.

- Open the firmware using Particle Dev.

- Click on "*Compile using Partcicle Cloud*".

- Select the device to flash.

- Click on "*flash device*".

If you run into errors, please see the troubleshooting guide at the end of this document.

1.3 Application Server

Currently, the *application-server* branch hosts the source code for the Application Server. It needs to be compiled using maven and run on a device which doesn't block incoming and outgoing connections on port 1883.
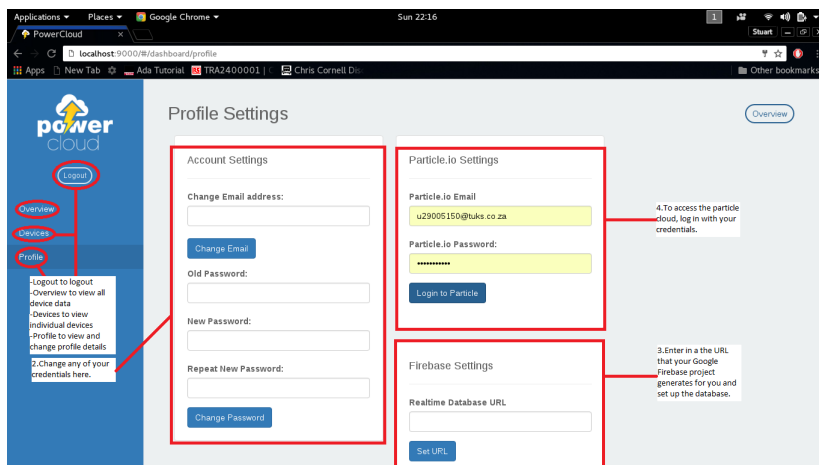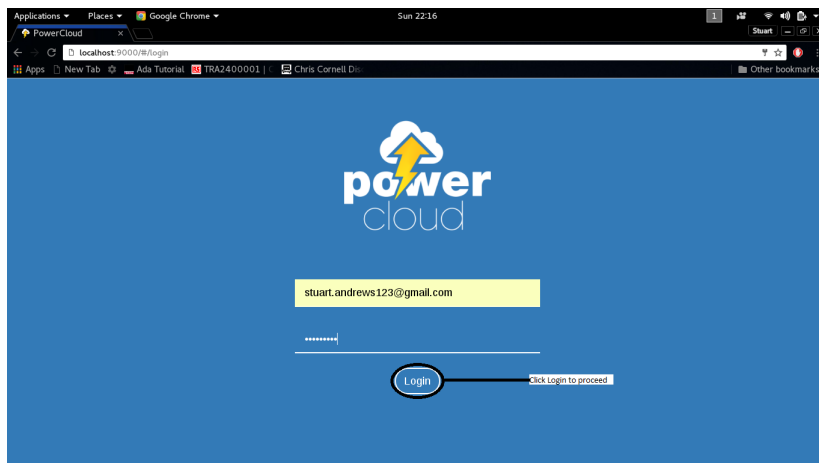
Compiling the Application Server
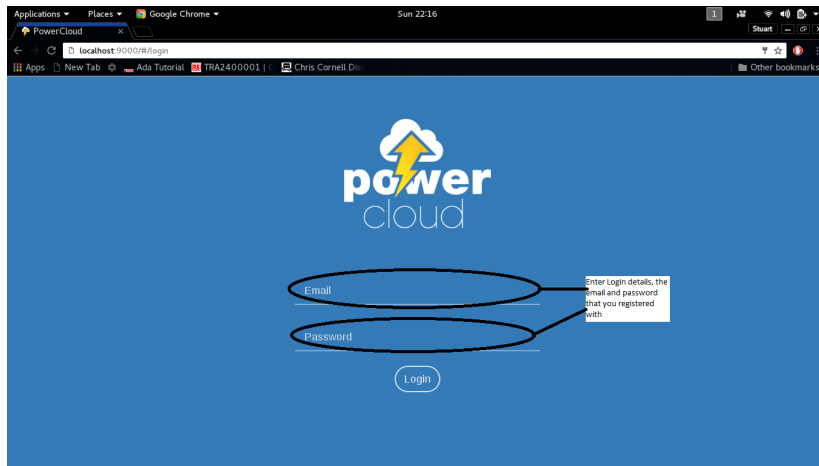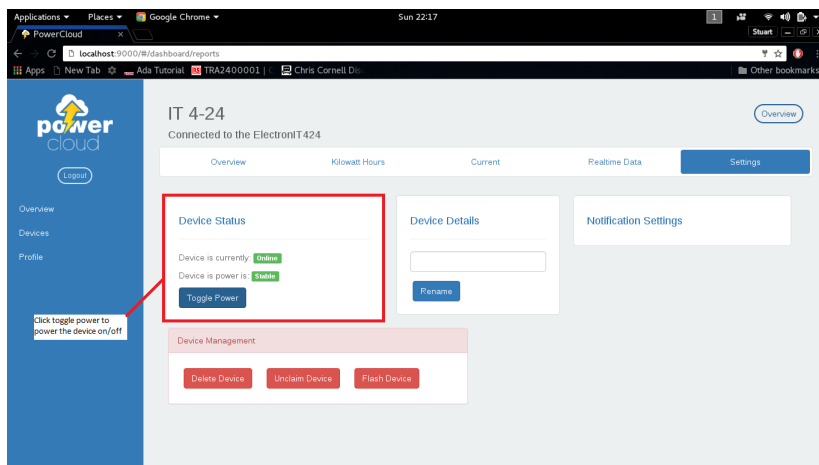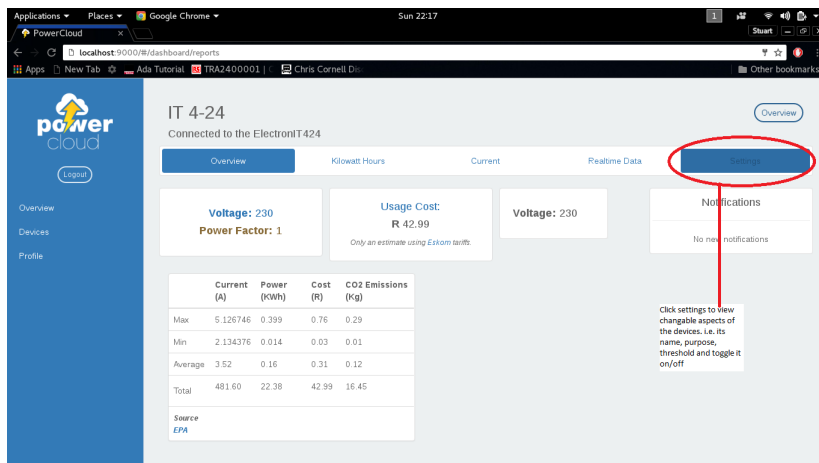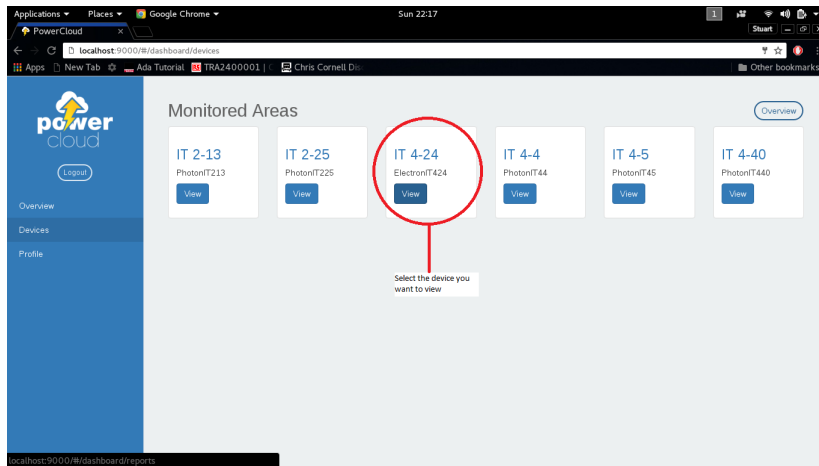Download the sources from GitHub and compile:

- *$ mvn package*

If you run into errors, please see the troubleshooting guide at the end of this document.

1.4   Web Application

Once the web app has been served, see below for *gulp serve*, the web app may be run by typing localhost:9000 into a browser.

Enter Login details, the email and password that you registered with

Click Login to proceed

Profile Settings

Account Settings

Change Email address:

Change Email

Old Password:

New Password:

Repeat New Password:

Change Password

Particle.io Settings

Particle.io Email
u29005150@tuks.co.za

Particle.io Password:

Login to Particle

4.To access the particle cloud, log in with your credentials.

Firebase Settings

Realtime Database URL

Set URL

3.Enter in a the URL that your Google Firebase project generates for you and set up the database.

-Logout to logout
-Overview to view all device data
-Devices to view individual devices
-Profile to view and change profile details

2.Change any of your credentials here.

Logout

Overview

Devices

Profile

Overview

Select the device you want to view

Click settings to view changable aspects of the devices. i.e. its name, purpose, threshold and toggle it on/off

Click toggle power to power the device on/off

2 Starting PowerCloud

2.1 Firmware

Once the firmware has been compiled and the binary file produced. Flash the photon with the following command:

- *particle serial flash Photon Name *.ino*

2.2 Application Server

Once the application server has been compiled, change your directory to IllusionSolutions/test/, run the application server using the following command

- *java -jar applicationServer-*.jar*

2.3 Web Application

To start the PowerCloud Web application open the console.

- *npm install*

- *bower install*

- *gulp serve*

The web application should now be available on **http://localhost:9000/**

3 Troubleshooting

I am getting errors when trying to install through the console.

- Try using sudo before the command. Example: sudo npm install particle-cli

The Web Application won't run and is giving errors when executing the gulp serve command.

- Make sure you've run npm install and bower install.

- Make sure you're in the correct directory where the web application is located.