

# Instruction manual for PowerCloud

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# 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 Particle 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.*

## 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.