PokemonGo-Map Documentation

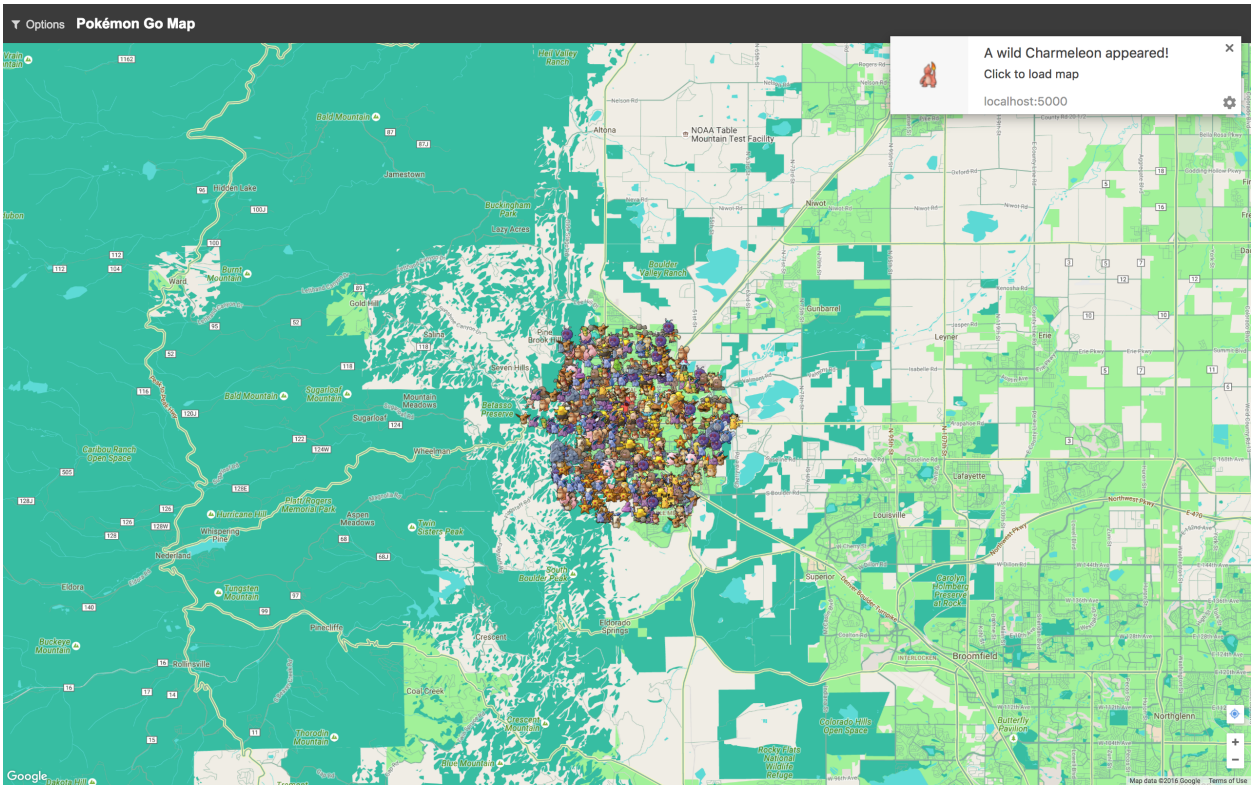
Release 3.1.0

Pokemon Masters

Feb 22, 2017

About

Pokemon-Go Map gives you a live visualization map of nearby Pokémon, Pokéstops, and gyms in a form of a web-app as well as native phone application



[Official Homepage] [Official GitHub] [Discord Support] [GitHub Issues]

CHAPTER 1

Contributing to this Wiki

Note: This article is about contributing pages and edits to this wiki. For contributing to the map itself see *App Development*.

You can fork this documentation from the main PokemonGo-Map github project and open pull requests for changes.

Adding or Editing Pages

A few guidlines to help keep things clean and organized...

Keep filenames short and to the point, for example: `installation.rst`

Always begin your new page with a title:

```
Awesome Wiki Page
#################
```

Titles will be shown at the top of a page and in the site nagivation. A title should describe a page in a glance. The rest of the file is written in ReST structured text. Here is a cheatsheet for RST formatting.

Once done editing your page, add it under one of the `toctree` sections in `index.rst`.

Now to preview your changes, open a terminal, go into the `docs` directory and use `make clean-auto auto`. This will start a local webserver with live updates pages as you save them.

Finally, when you are finished, submit your changes as a Pull Request to be reviewed.

CHAPTER 2

App Development

Note: This article is about contributing to the development codebase. For contributing to the wiki see *Contributing to this Wiki*.

Warning: These instructions will help you get started contributing code to the `develop` branch. If you just want to **use the map** you should not use `develop`, instead follow the *Basic Installation* instructions

Development requires several tools to get the job done. Python, obviously, needs to be installed. We also utilize NodeJS and Grunt for front-end asset compilation. The *Basic Installation* instructions have an extra section about getting node installed. Follow that.

Node and Grunt

Grunt is a tool to automatically run tasks against the code. We use grunt to transform the Javascript and CSS before it's run, and bundle it up for distribution.

If you want to change the Javascript or CSS, you must install and run Grunt to see your changes

Compiling Assets

After Grunt is installed successfully, you need to run it when you change Javascript or CSS.

Simply type

```
npm run watch
```

on the command-line. This runs a default grunt "task" that performs a number of subtasks, like transforming JS with Babel, minifying, linting, and placing files in the right place. It will also automatically start a "watch" which will automatically rebuild files as you modify them. You can stop grunt-watch with CTRL+C.

If you'd like to just build assets once, you can run:

```
npm run build
```

The "/dist" directory

Files in the "static/dist/" subdirectories should not be edited. These will be automatically overwritten by Grunt.

To make your changes you want to edit e.g. `static/js/map.js`

CHAPTER 3

Basic Installation

These instructions cover an instation from a **release** as well as from a git clone.

Prerequisites

Follow one of the guides below to get the basic prerequisites installed:

- *OSX Prerequisites*
- *Windows Prerequisites*
- *Linux Install*

Credentials

- You'll need an active Pokemon Trainer Club account or Google account
- Get a *Google Maps Key*

Downloading the Application

You have an important decision here, you may either download a "release" or use `git` to fetch the latest development version. The release versions tend to be more stable and require less technical install steps, but they will have fewer features.

Release Version

If you want to run a release version, visit the Github releases page and download and extract the release you want to run

`git` Version

If you're going to run a copy from the latest `develop` branch in `git` you can clone the repository:

```
git clone https://github.com/PokemonGoMap/PokemonGo-Map.git
```

Installing Modules

At this point you should have the following:

- Python 2.7
- pip
- PokemonGo-Map application folder

First, open up your shell (`cmd.exe`/`terminal.app`) and change to the directory of PokemonGo-Map.

You can verify your installation like this:

```
python --version
pip --version
```

The output should look something like:

```
$ python --version
Python 2.7.12
$ pip --version
pip 8.1.2 from /usr/local/lib/python2.7/site-packages (python 2.7)
```

Now you can install all the Python dependencies, make sure you're still in the directory of PokemonGo-Map:

Windows:

```
pip install -r requirements.txt
```

Linux/OSX:

```
sudo -H pip install -r requirements.txt
```

`git` Version Extra Steps

Warning: This only applies if you are running from a `git clone`. If you are using a release version, skip this section

In order to run from a git clone, you must compile the front-end assets with node. Make sure you have node installed for your platform:

- Windows
- OSX
- Linux – refer to the package installation for your flavor of OS

Once node/npm is installed, open a command window and validation your install:

```
node --version
npm --version
```

The output should look something like:

```
$ node --version
v4.7.0
$ npm --version
3.8.9
```

Once node/npm is installed, you can install the node dependencies and build the front-end assets:

```
npm install

# The assets should automatically build (you'd see something about "grunt build")
# If that doesn't happen, you can directly run the build process:
npm run build
```

Basic Launching

Once those have run, you should be able to start using the application, make sure you're in the directory of PokemonGo-Map then:

```
python ./runserver.py --help
```

Read through the available options and set all the required CLI flags to start your own server. At a minimum you will need to provide a location, account login credentials, and a *google maps key*.

The most basic config you could use would look something like this:

```
python ./runserver.py -a ptc -u "USERNAME_HERE" -p "PASSWORD_HERE" \
 -l "a street address or lat/lng coords here" -st 3 -k "maps key here"
```

Open your browser to http://localhost:5000 and your pokemon will begin to show up! Happy hunting!

Updating the Application

PokemonGo-Map is a very active project and updates often. You can follow the latest changes to see what's changing.

If you are running a **release** version, you can simply start this tutorial over again with a new download.

If you are running a `git` version, you can update with a few quick commands:

```
git pull
pip install -r requirements.txt --upgrade
npm install
npm run build
```

You can now restart your `runserver.py` command.

CHAPTER 4

Windows Prerequisites

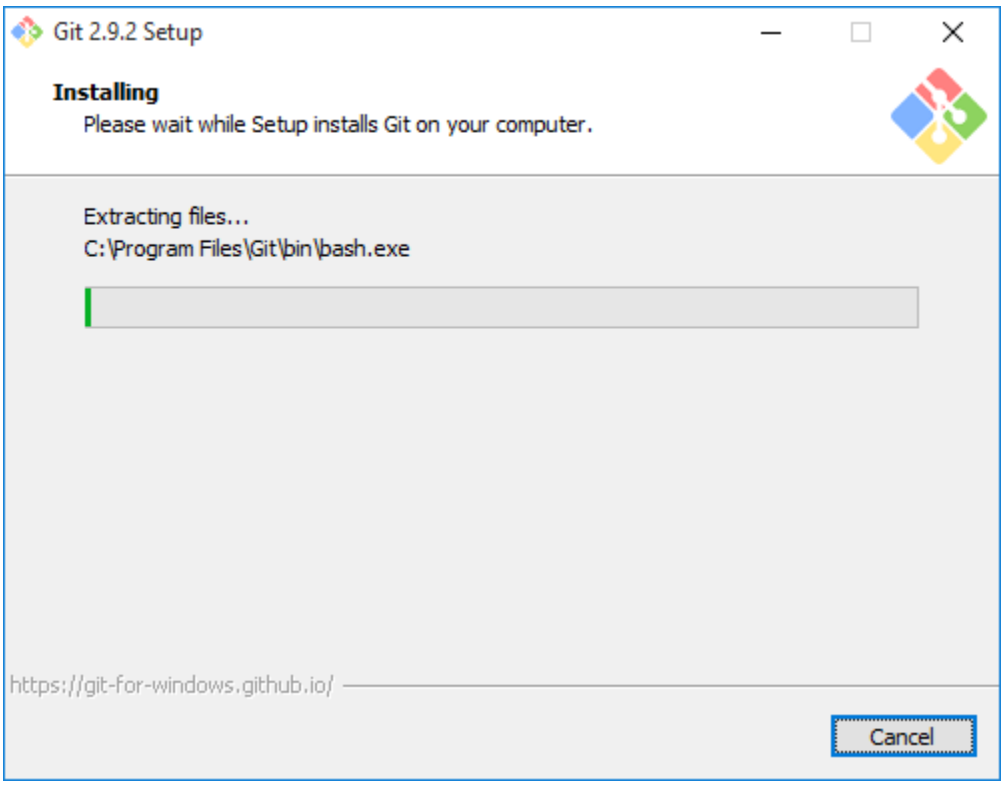
In order to run the project, you will need Python, pip and the project dependencies.

Prerequisites

- git for windows
- Python 2.7.1.2
- Microsoft Visual C++ Compiler for Python 2.7

Step 1: Install Git for Windows

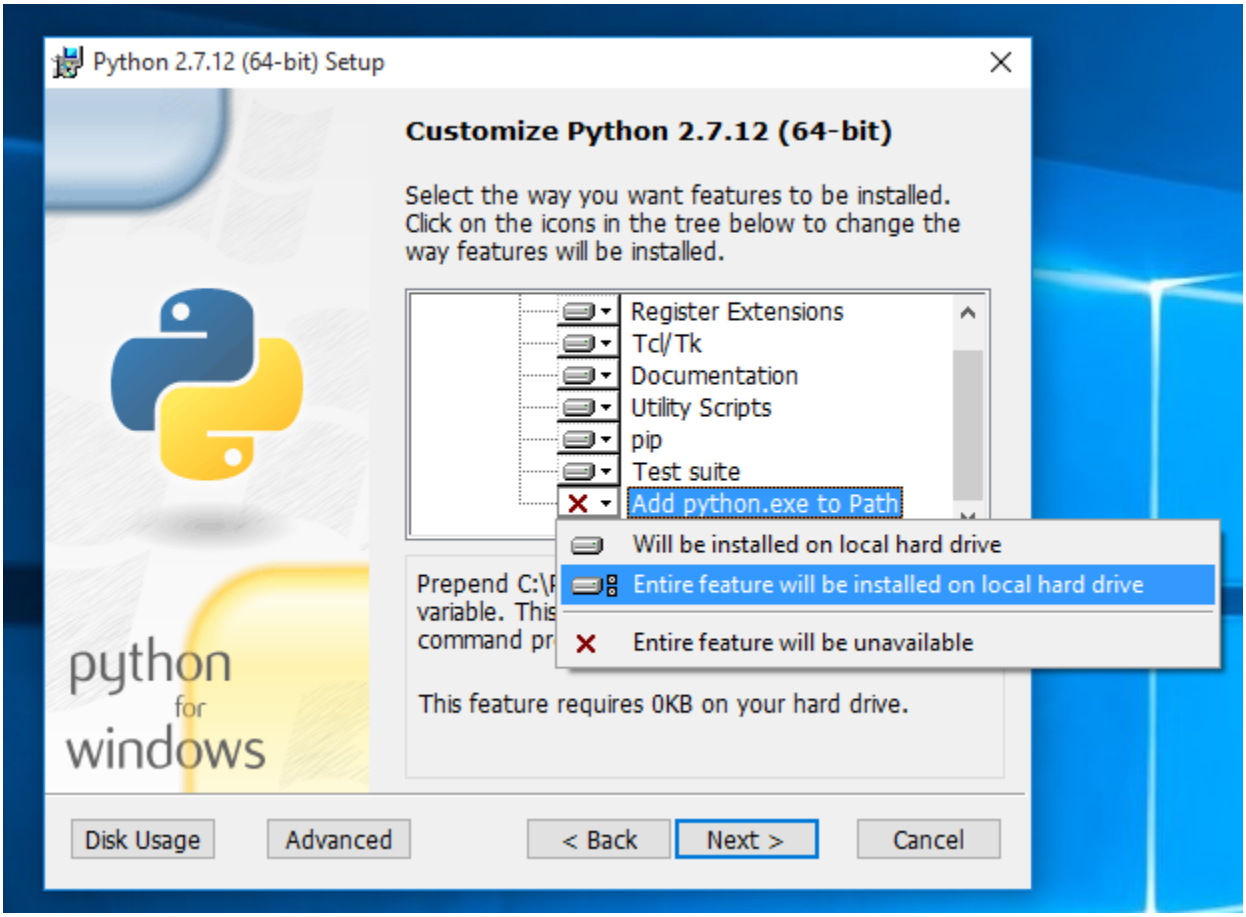
Download Git for Windows from the link above and install it. You will be fine with all recommended options during the setup.



Step 2: Install Python

Note: If you already have another version of Python installed, you probably want to uninstall that version and install 2.7.1.2. I did not test this setup with any other version.

Download Python 2.7.1.2 either as the 64bit or the 32bit version from the link above. **Make sure** to add Python to PATH during the setup (see screenshot)!

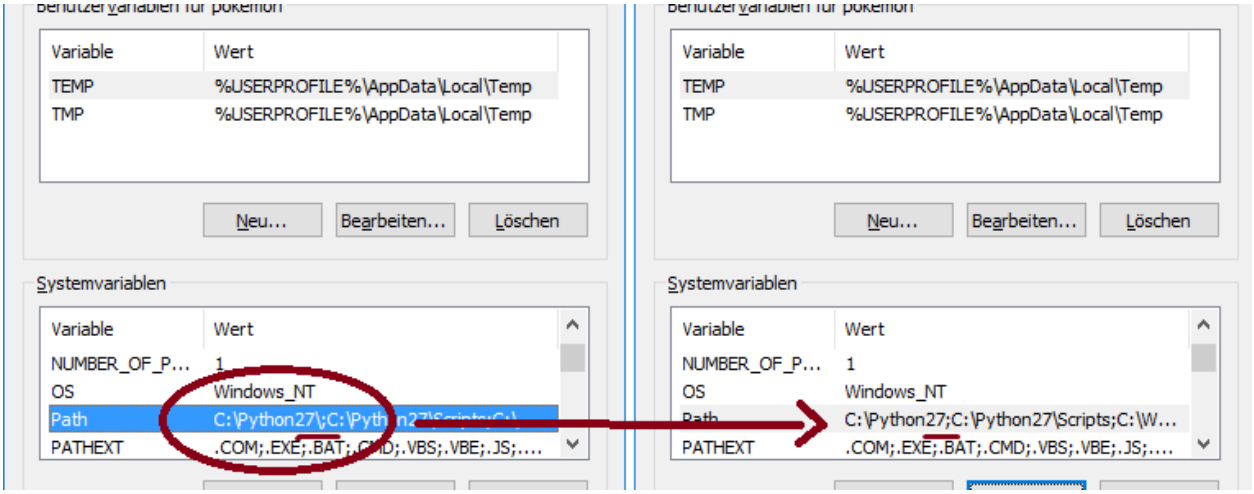


You may run into issues running python if you do not install it onto your primary partition (typically `c:`)

Optional: Fix Python Path

This step is not needed on every system, but it's probably good to check if everything is set up correctly.

First things first. Press `WindowsKey + PAUSE` on your keyboard and select *Advanced System Settings* from the left side menu. At the bottom of that windows click *Environment Variables*. In my case the Python value for the Path variable was set to `C:\Python27\;` which is wrong. You have to remove final backslash if that's the case for you too. If you're having issues with this feel free to open an Issue.



All set, head back to the basic install guide.

CHAPTER 5

OSX Prerequisites

In order to run the project, you will need Python, pip and the project dependencies. Version 2.7 is what we usually test against. You can use 3.x but no support will be given.

Prerequisites for this guide

- Mac OSX 10.9+
- Homebrew for Mac

Step 1: Install Homebrew

Follow the install instructions at http://brew.sh/ to get Homebrew installed

Step 2: Install Project Requirements

```
brew install git python protobuf
```

All set, head back to the basic install guide.

CHAPTER 6

Linux Install

Installation will require Python 2.7 and Pip.

Ubuntu

You can install the required packages on Ubuntu by running the following command:

```
curl -sL https://deb.nodesource.com/setup_6.x | sudo -E bash -
sudo apt-get install -y python python-pip python-dev nodejs nodejs-legacy build-
↪essential
```

Debian 7/8

Debian's sources lists are out of date and will not fetch the correct versions of Python and PIP. You must download and install these from source:

```
sudo apt-get install -y build-essential libbz2-dev libsqlite3-dev libreadline-dev␣
↪zlib1g-dev libncurses5-dev libssl-dev libgdbm-dev python-dev nodejs npm
wget https://www.python.org/ftp/python/2.7.12/Python-2.7.12.tgz
tar xzf Python-2.7.12.tgz && cd Python-2.7.12
./configure --prefix=/opt/python
make
make install
ln -s /opt/python/bin/python2.7 /usr/local/bin/python2.7
ln -s /opt/python/bin/python2.7 /usr/bin/python2.7
ln -s /usr/bin/python2.7 /usr/bin/python
ln -s /usr/local/bin/python2.7 /usr/local/bin/python
ln -s /opt/python/bin/pip /usr/bin/pip
ln -s /opt/python/bin/pip /usr/local/bin/pip
ln -s /usr/bin/nodejs /usr/bin/node
sed -e '$a\PATH="$PATH:/opt/python/bin"\' ~/.profile
source ~/.profile
wget https://bootstrap.pypa.io/get-pip.py
python get-pip.py
```

After install, check that you have the correct versions in your environment variables:

```
~$ python --version
        Python 2.7.12
~$ pip --version
        pip 8.1.2 from /home/user/.local/lib/python2.7/site-packages (python 2.7)
```

If your output looks as above, you can proceed with installation:

```
sudo -H pip install -r requirements.txt
sudo npm install
sudo npm install -g grunt-cli
sudo grunt build
```

Troubleshooting:

If you have preciously installed pip packages before following this guide, you may need to remove them before installing:

```
pip freeze | xargs pip uninstall -y
```

If you're getting the following error:

```
root:~/PokemonGo-Map# ./runserver.py
Traceback (most recent call last):
        File "./runserver.py", line 10, in <module>
        import requests
ImportError: No module named requests

You will need to completely uninstall all of your pip packages, pip, and python, then␣
↪re-install from source again. Something from your previous installation is still␣
↪hanging around.
```

Debian 7

Additional steps are required to get Debian 7 (wheezy) working. You'll need to update from `glibc` to `eglibc`

Edit your `/etc/apt/sources.list` file and add the following line:

```
deb http://ftp.debian.org/debian sid main
```

Then install the packages for `eglibc`:

```
sudo apt-get update
apt-get -t sid install libc6-amd64 libc6-dev libc6-dbg
reboot
```

Red Hat or CentOs or Fedora

You can install required packages on Red Hat by running the following command:

You may also need to install the EPEL repository to install `python-pip` and `python-devel`.

```
yum install epel-release
yum install python python-pip python-devel
```

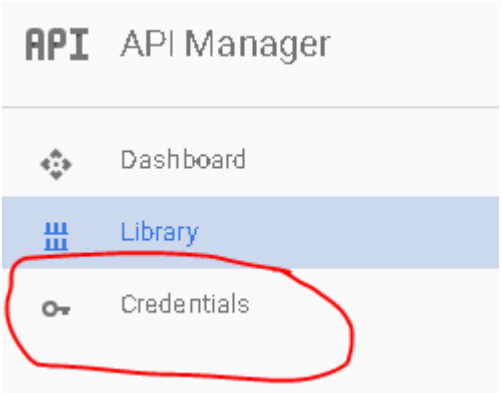
All set, head back to the basic install guide.

Google Maps Key

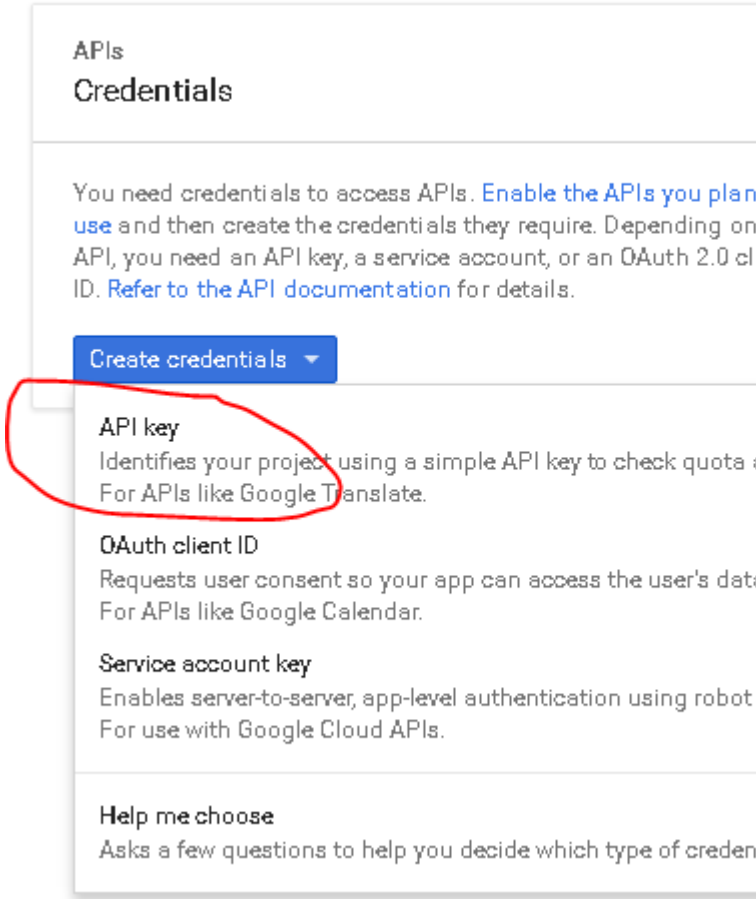
This project uses Google Maps. Each instance of Google Maps requires an API key to make it functional. This is quick guide to setting up your own key.

Getting the API Key

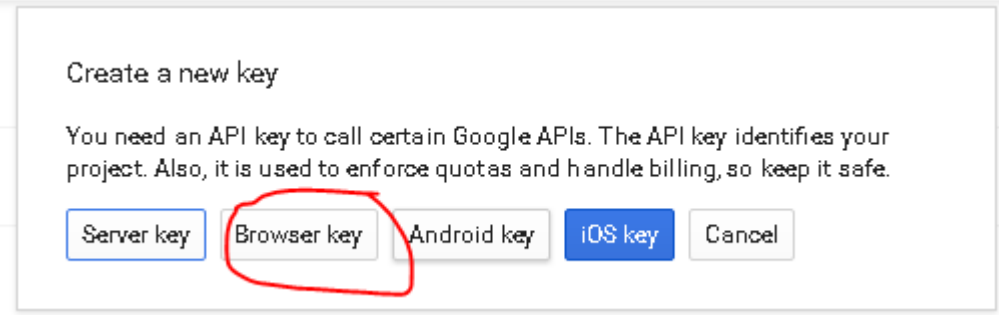
1. Go to Google API Console
2. If it's the first time, click 'Next' on a bunch of pop-ups or just click somewhere where the pop-ups aren't
3. Create Credentials



   - Select a project: Create a project
   - Project name: Anything you want
   - Yes/No for email
   - Yes to agree to ToS
   - Click create.
4. Get your API Key
   - Click on Credentials again
   - Click Create -> API
   - Choose 'Browser Key'



- Click 'Create' and then copy the API Key somewhere



5. Enable two Google Maps APIs
   - Google Maps Javascript API - Enables Displaying of Map
     - Click on 'Library'
     - Click on Google Maps Javascript API
     - Click 'ENABLE'
   - Google Places API Web Service - Enables Location Searching
     - Click on 'Library'
     - Type 'Places' into the search box ' Search all 100+ APIs'
     - Choose Google Places API Web Service

- Click ‘ENABLE’

Using the API Key

The google maps api key may either be installed in `config/config.ini` file, or you can provide it as a command line parameter like `-k 'your key here'`

CHAPTER 8

Amazon ECS

Warning – Most cloud providers have been IP blocked from accessing the API

Amazon ECS is essentially managed docker allowed you to run multi-container environments easily with minimal configuration. In this guide we'll create an ECS Task that will run a single pokemongo-map container with a MariaDB container

Requirements

- AWS Account
- AWS ECS Cluster with at least one instance assigned
  - t2.micro type is sufficient for this setup

Process

In the AWS ECS console create a Task Definition with the JSON below. You will need to set the following values:

- `POKEMON_USERNAME` - username for pokemongo
- `POKEMON_PASSWORD` - password for pokemongo
- `POKEMON_AUTH_SERVICE` - Define if you are using google or ptc auth
- `POKEMON_LOCATION` - Location to search
- `POKEMON_DB_USER` - Database user for MariaDB
- `POKEMON_DB_PASS` - Database password for MariaDB

```
{
    "taskRoleArn": null,
    "containerDefinitions": [
        {
            "volumesFrom": [],
            "memory": 128,
            "extraHosts": null,
            "dnsServers": null,
            "disableNetworking": null,
            "dnsSearchDomains": null,
            "portMappings": [
```

```
                {
                    "hostPort": 80,
                    "containerPort": 5000,
                    "protocol": "tcp"
                }
            ],
            "hostname": null,
            "essential": true,
            "entryPoint": null,
            "mountPoints": [],
            "name": "pokemongomap",
            "ulimits": null,
            "dockerSecurityOptions": null,
            "environment": [
                {
                    "name": "POKEMON_DB_TYPE",
                    "value": "mysql"
                },
                {
                    "name": "POKEMON_LOCATION",
                    "value": "Seattle, WA"
                },
                {
                    "name": "POKEMON_DB_HOST",
                    "value": "database"
                },
                {
                    "name": "POKEMON_NUM_THREADS",
                    "value": "1"
                },
                {
                    "name": "POKEMON_DB_NAME",
                    "value": "pogom"
                },
                {
                    "name": "POKEMON_PASSWORD",
                    "value": "MyPassword"
                },
                {
                    "name": "POKEMON_GMAPS_KEY",
                    "value": "SUPERSECRET"
                },
                {
                    "name": "POKEMON_AUTH_SERVICE",
                    "value": "ptc"
                },
                {
                    "name": "POKEMON_DB_PASS",
                    "value": "somedbpassword"
                },
                {
                    "name": "POKEMON_DB_USER",
                    "value": "pogom"
                },
                {
                    "name": "POKEMON_STEP_LIMIT",
                    "value": "10"
                },
```

```
                {
                    "name": "POKEMON_USERNAME",
                    "value": "MyUser"
                }
            ],
            "links": [
                "database"
            ],
            "workingDirectory": null,
            "readonlyRootFilesystem": null,
            "image": "ashex/pokemongo-map",
            "command": null,
            "user": null,
            "dockerLabels": null,
            "logConfiguration": null,
            "cpu": 1,
            "privileged": null
        },
        {
            "volumesFrom": [],
            "memory": 128,
            "extraHosts": null,
            "dnsServers": null,
            "disableNetworking": null,
            "dnsSearchDomains": null,
            "portMappings": [],
            "hostname": "database",
            "essential": true,
            "entryPoint": null,
            "mountPoints": [],
            "name": "database",
            "ulimits": null,
            "dockerSecurityOptions": null,
            "environment": [
                {
                    "name": "MYSQL_DATABASE",
                    "value": "pogom"
                },
                {
                    "name": "MYSQL_RANDOM_ROOT_PASSWORD",
                    "value": "yes"
                },
                {
                    "name": "MYSQL_PASSWORD",
                    "value": "somedbpassword"
                },
                {
                    "name": "MYSQL_USER",
                    "value": "pogom"
                }
            ],
            "links": null,
            "workingDirectory": null,
            "readonlyRootFilesystem": null,
            "image": "mariadb:10.1.16",
            "command": null,
            "user": null,
            "dockerLabels": null,
```

```
            "logConfiguration": null,
            "cpu": 1,
            "privileged": null
        }
    ],
    "volumes": [],
    "family": "pokemongo-map"
}
```

If you would like to add workers you can easily do so by adding another container with the additional variable `POKEMON_NO_SERVER` set to `true`. You have to let one of the pokemongo-map containers start first to create the database, an easy way to control this is to create a link from the worker to the primary one as it will delay the start.

Once the Task is running you'll be able to access the app via the Instances IP on port 80.

CHAPTER 9

Bluemix

Bluemix is IBM's PaaS, built on top of Cloud Foundry, and it's free tier allows you to have 24 up time! Oh boy!

Prerequisites

1. Clone the git repo via `https://github.com/PokemonGoMap/PokemonGo-Map.git`
2. Create a Bluemix account
3. Install the Cloud Foundry CLI - Download here.

Create and Run the App on Bluemix

To do this, you can either use the GUI (click through, create a new python runtime and name it). Once it's created, you push the code by `cd`ing into the directory and running:

```
cf push <nameofapp>
```

To do the same thing via command line, you simply run that last command. It'll create the app and push the code for you.

Note that this first deploy will fail! We need to configure the environment variables for authentication to Pokemon Go and your Google API Key. To do that via the CLI:

```
cf set-env <nameofapp> AUTH_SERVICE <ptc|google>
cf set-env <nameofapp> USERNAME <username>
cf set-env <nameofapp> PASSWORD <password>
cf set-env <nameofapp> GMAPS_KEY <your google api key>
cf set-env <nameofapp> STEP_COUNT <step count>
cf set-env <nameofapp> LOCATION <the location you're spying on>
```

To set the environment variables via the GUI, you navigate to the "environment variables" tab in the app dashboard, click on "user defined," and enter them one by one.

Also make sure to paste your google api key in `config/credentials.json`.

Once the environment variables are set, and your credentials are set in `config/credentials.json`, re-push via `cf push <nameofapp>`.

An alternate way to set your credentials

Alternatively, instead of going the environment variable route, you can set up `config/config.ini`, and change the start command in `manifest.yml` to be

```
python runserver.py -se
```

which will pull the values from the config file instead of from the env vars.

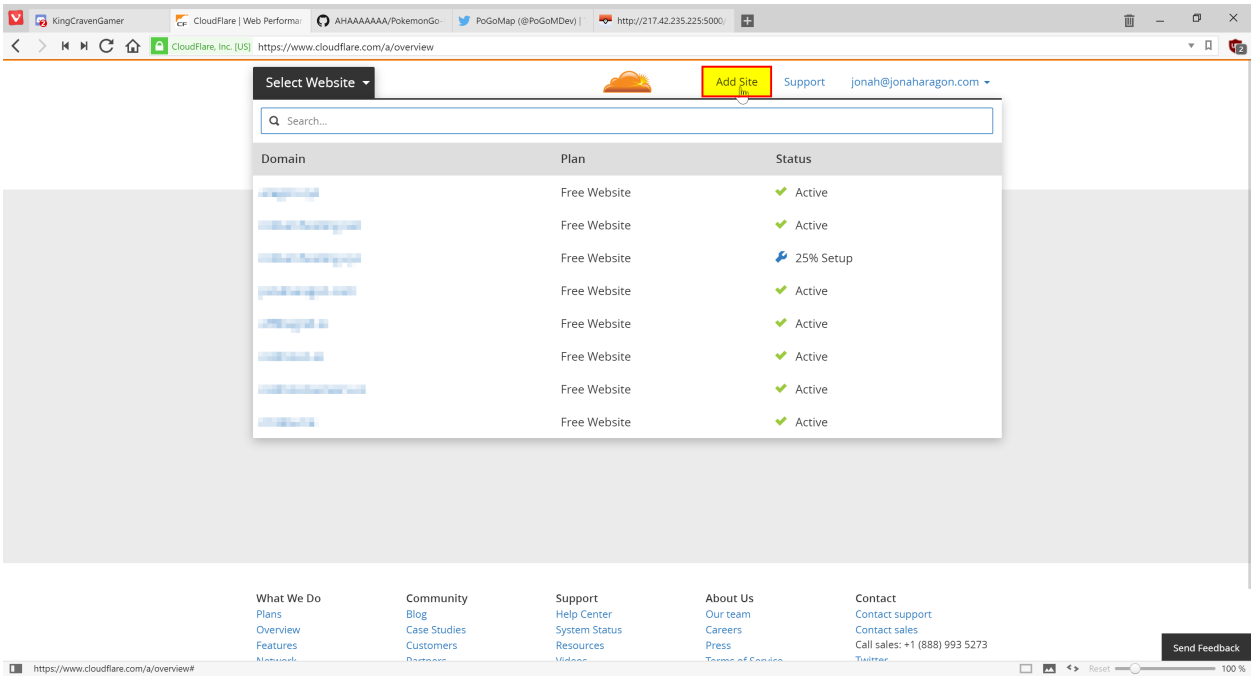
CloudFlare

Prerequisites

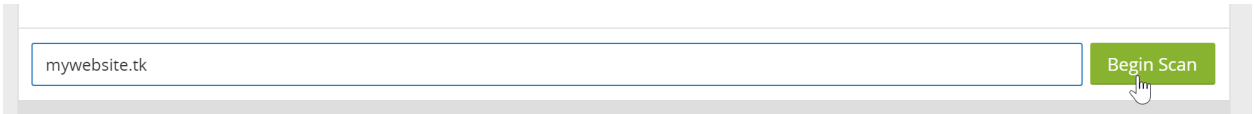
- A domain name (free ones can be had from places like Freenom)
- Your server port forwarded and **running on Port 80**

Getting Started

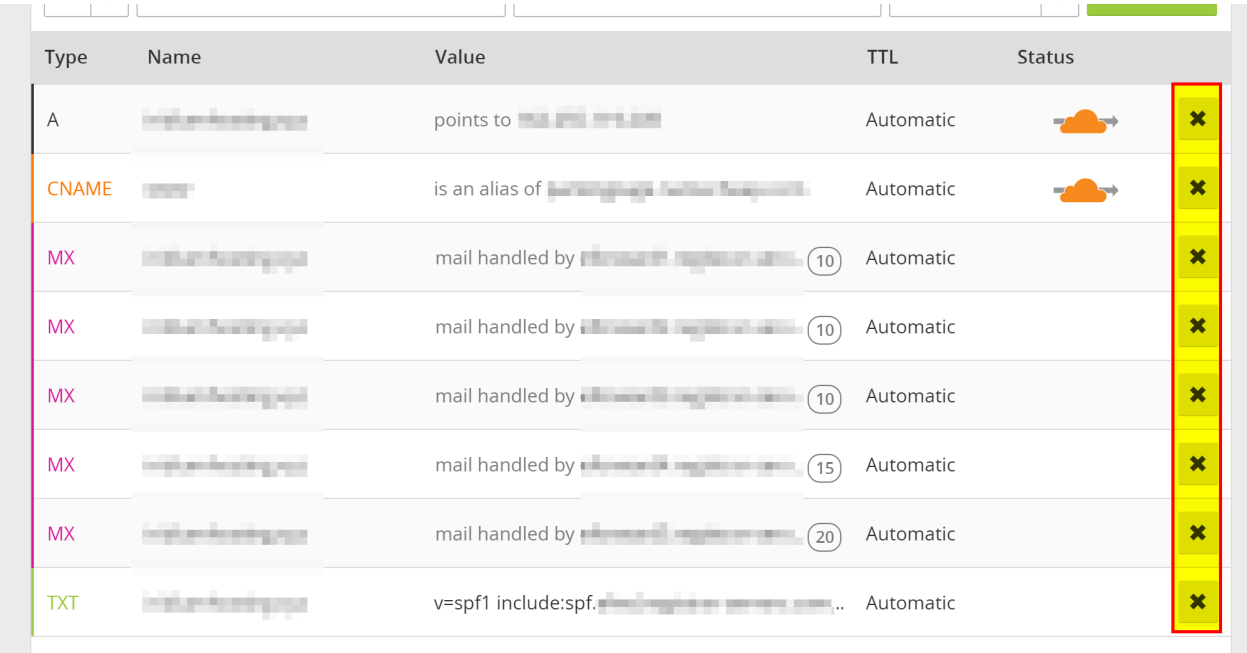
First, sign up for an account at cloudflare.com. Get signed in and click "Add Site" at the top of the page to get started.



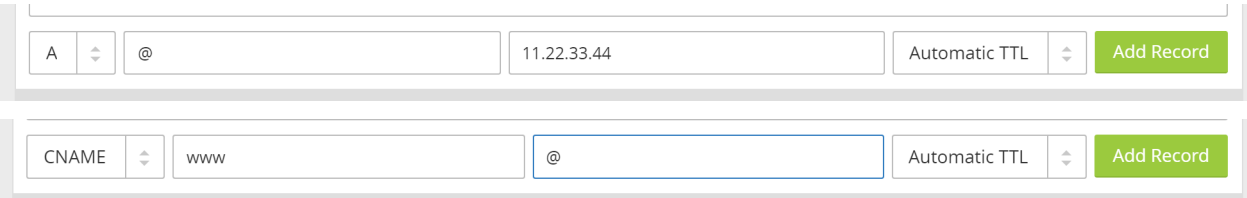
Enter your website in the text field and press "Begin Scan," when that finishes click Continue Setup next to your Domain.



If there is already information in this table, click the "X"s to clear them all out unless you already know what they are.



When the information is cleared, add two new records with the text boxes at the top with the following configuration:



They should be added in the table automatically when you press "Add Record." **Make sure they have the Orange Cloud next to them** to stay secure. When this is done, press "Continue" at the bottom of the page. On the next page select the "Free Website" option if it isn't already preselected and "Continue" again.

Now it will give you two Nameservers on a page similar to this (although yours will most likely be different). Copy both the bold ones and put them in your domain settings at your registrar.

Current Nameservers	Change Nameservers to:
dns1.registrar-servers.com	**brad.ns.cloudflare.com**
dns2.registrar-servers.com	**pam.ns.cloudflare.com**

Instructions to change your nameservers differ between domain registrars, here's instructions for a few common ones:

- Namecheap
- GoDaddy
- Freenom

Once you have them set, navigate back to CloudFlare and press the Green Continue button once more, and you should be set! It may take **up to** 24 hours for it to switch to CloudFlare, but most of the time it happens much faster than that.

While we wait for it to switch, we should change some settings.

Settings to Change

Click the "Crypto" tab at the top and change SSL from Full to Flexible if it isn't already.

Navigate to "Firewall" and change "Security Level" to "High." If you are running this from your house consider setting it to "I'm under attack" for the highest amount of DDoS security against your server.

Finishing Up

Everything should not be configured correctly! Simply visit `http://yourdomain.com/` in your browser and your map should load, all while hiding your IP address from everybody else.

CHAPTER 11

DigitalOcean

Warning – Most cloud providers have been IP blocked from accessing the API

Prerequisites

- A DigitalOcean account - Using this link will grant $10 in credit, enough for running your server for up to 2 months.
- A Google Maps API key
- A new Pokemon Club account

Installation

Create a Droplet in your DigitalOcean control panel with Ubuntu 16.04, any Droplet size will work.

Check the "User Data" box lower on the page and enter the following:

```
#!/bin/bash

apt-get -y update
apt-get -y install python python-pip git
git clone https://github.com/PokemonGoMap/PokemonGo-Map.git /root/PoGoMap
cd /root/PoGoMap
pip install -r requirements.txt
python runserver.py -u [USERNAME] -p [PASSWORD] -st 10 -k [Google Maps API key] -l
↪"[LOCATION]" -H 0.0.0.0 -P 80
```

Important: Be sure to replace `[USERNAME]`, `[PASSWORD]`, [API Key], and[LOCATION]' with your Pokemon Trainers Club Username and Password, your Google Maps API Key, and your location (Latitude and Longitude), respectively. You will be able to change locations later on the site.

Once you have that, create your Droplet. Setup will take a few minutes initially, but once it's done your map will be accessible at `http://[YOURDROPLET]/`, replacing that of course with your Droplet's IP address.

Starting the server

On the first boot the server will start automatically so this step isn't necessary, however if you have to restart the Droplet for any reason, you can start PoGoMap with the following two commands:

```
cd /root/PoGoMap
python runserver.py -u [USERNAME] -p [PASSWORD] -st 10 -k [Google Maps API key] -l
↪"[LOCATION]" -H 0.0.0.0 -P 80
```

Credit: JonahAragon

CHAPTER 12

Docker

Docker is a great way to run "containerized" applications easily and without installing tons of stuff into your computer.

If you are not familiar or don't feel confortable with Python, pip or any of the other the other stuff involved in launching a PokemonGo-Map server, Docker is probably the easiest approach for you.

Prerequisites

- Docker
- Google Maps API Key

Introduction

The quickest way to get PokemonGo-Map up and running with docker is quite simple. However, given the disposable nature of docker containers, and the fact that the default database for PokemonGo-Map is SQLite, your data won't be persistent. In case the container is stopped or crashes, all the collected data will be lost.

If that doesn't bother you, and you just want to give PokemonGo-Map a go, keep on reading. If you prefer a persistent setup, skip to "Advanced Docker Setup"

Simple Docker Setup

Starting the server

In order to start the map, you've got to run your docker container with a few arguments, such as authentication type, account, password, desired location and steps. If you don't know which arguments are necessary, you can use the following command to get help:

```
docker run --rm pokemap/pokemongo-map -h
```

To be able to access the map in your machine via browser, you've got to bind a port on your host machine to the one wich will be exposed by the container (default is 5000). The following docker run command is an example of to launch a container with a very basic setup of the map, following the instructions above:

```
docker run -d --name pogomap -p 5000:5000 \
  pokemap/pokemongo-map \
    -a ptc -u username -p password \
    -k 'your-google-maps-key' \
    -l 'lat, lon' \
    -st 5
```

If you would like to see what are the server's outputs (console logs), you can run:

```
docker logs -f pogomap
```

Press `ctrl-c` when you're done.

Stopping the server

In the step above we launched our server in a container named `pogomap`. Therefore, to stop it as simple as running:

```
docker stop pogomap
```

After stopping a named container, if you would like to launch a new one re-using such name, you have to remove it first, or else it will not be allowed:

```
docker rm pogomap
```

Local access

Given that we have bound port 5000 in your machine to port 5000 in the container, which the server is listening to, in order to access the server from your machine you just got to access `http://localhost:5000` in your preferred browser.

External access

If external access is necessary, there are plenty of ways to expose you server to the web. In this guide we are going to approach this using a ngrok container, which will create a secure introspected tunnel to your server. This is also very simple to do with Docker. Simply run the following command:

```
docker run -d --name ngrok --link pogomap \
  wernight/ngrok \
    ngrok http pogomap:5000
```

After the ngrok container is launched, we need to discover what domain you've been assigned. The following command can be used to obtain the domain:

```
docker run --rm --link ngrok \
  appropriate/curl \
    sh -c "curl -s http://ngrok:4040/api/tunnels | grep -o 'https\?:\/\/[a-zA-Z0-9\.
↪]\+'"
```

That should output something like:

```
http://random-string-here.ngrok.io
https://random-string-here.ngrok.io
```

Open that URL in your browser and you're ready to rock!

Updating Versions

In order to update your PokemonGo-Map docker image, you should stop/remove all the containers running with the current (outdated) version (refer to "Stopping the server"), pull the latest docker image version, and restart everything. To pull the latest image, use the following command:

```
docker pull pokemap/pokemongo-map
```

If you are running a ngrok container, you've got to stop it as well. To start the server after updating your image, simply use the same commands that were used before, and the containers will be launched with the latest version.

Running on docker cloud

If you want to run pokemongo-map on a service that doesn't support arguments like docker cloud or ECS, you'll need to use one of the more specialised images out there that supports variables. The image `ashex/pokemongo-map` handles variables, below is an example:

```
docker run -d -P \
  -e "AUTH_SERVICE=ptc" \
  -e "USERNAME=UserName" \
  -e "PASSWORD=Password" \
  -e "LOCATION=Seattle, WA" \
  -e "STEP_LIMIT=5" \
  -e "GMAPS_KEY=SUPERSECRET" \
  ashex/pokemongo-map
```

Advanced Docker Setup

In this session, we are going to approach a docker setup that allows data persistence. To do so, we are going to use the docker image for MySQL as our database, and have our server(s) connect to it. This could be done by linking docker containers. However, linking is considered a legacy feature, so we are going to use the docker network approach. We are also going to refer to a few commands that were used in the "Simple Docker Setup" session, which has more in-depth explanation about such commands, in case you need those.

Creating the Docker Network

The first step is very simple, we are going to use the following command to create a docker network called `pogonw`:

```
docker network create pogonw
```

Launching the database

Now that we have the network, we've gotta launch the database into it. As noted in the introduction, docker containers are disposable. Sharing a directory in you machine with the docker container will allow the MySQL server to use such directory to store its data, which ensures the data will remain there after the container stops. You can create this directory wherever you like. In this example we going to create a dir called `/path/to/mysql/` just for the sake of it.

```
mkdir /path/to/mysql/
```

After the directory is created, we can lauch the MySQL container. Use the following command to launch a container named `db` into our previously created network, sharing the directory we just created:

```
docker run --name db --net=pogonw -v /path/to/mysql/:/var/lib/mysql -e MYSQL_ROOT_
↪PASSWORD=yourpassword  -d mysql:5.6.32
```

The launched MySQL server will have a single user called `root` and its password will be `yourpassword`. However, there is no database/schema that we can use as the server will be empty on the first run, so we've gotta create one for PokemonGo-Map. This will be done by executing a MySQL command in the server. In order to connect to the server, execute this command:

```
docker exec -i db mysql -pyourpassword -e 'CREATE DATABASE pogodb'
```

That will do the trick. If you want to make sure the database was created, execute the following command and check if `pogodb` is listed:

```
docker exec -i db mysql -pyourpassword -e 'SHOW DATABASES'
```

Relaunching the database

If the `db` container is not running, simply execute the same command that was used before to launch the container and the MySQL server will be up and running with all the previously stored data. You won't have to execute any MySQL command to create the database.

Launching the PokemonGo-map server

Now that we have a persistent database up and running, we need to launch our PokemonGo-map server. To do so, we are going to use a slightly modified version of the docker run command from the "Simple Docker Setup" session. This time we need to launch our server inside the created network and pass the necessary database infos to it. Here's an example:

```
docker run -d --name pogomap --net=pogonw -p 5000:5000 \
  pokemap/pokemongo-map \
    -a ptc -u username -p password \
    -k 'your-google-maps-key' \
    -l 'lat, lon' \
    -st 5 \
    --db-type mysql \
    --db-host db \
    --db-port 3306 \
    --db-name pogodb \
    --db-user root \
    --db-pass yourpassword
```

This will launch a container named `pogomap`. Just like before, in order to check the server's logs we can use:

```
docker logs -f pogomap
```

If you want more detailed logs, add the `--verbose` flag to the end of the docker run command.

If everything is fine, the server should be up and running now.

Launching workers

If you would like to launch a different worker sharing the same db, to scan a different area for example, it is just as easy. We can use the docker run command from above, changing the container's name, and the necessary account and coordinate infos. For example:

```
docker run -d --name pogomap2 --net=pogonw \
  pokemap/pokemongo-map \
    -a ptc -u username2 -p password2 \
    -k 'your-google-maps-key' \
    -l 'newlat, newlon' \
    -st 5 \
    --db-type mysql \
    --db-host db \
    --db-port 3306 \
    --db-name pogodb \
    --db-user root \
    --db-pass yourpassword
    -ns
```

The difference here being: we are launching with the `-ns` flag, which means that this container will only run the searcher and not the webserver (front-end), because we can use the webserver from the first container. That also means we can get rid of `-p 5000:5000`, as we dont need to bind that port anymore.

If for some reason you would like this container to launch the webserver as well, simply remove the `-ns` flag and add back the `-p`, with a different pairing as your local port 5000 will be already taken, such as `-p 5001:5000`.

External Access

Just like before, we can use ngrok to provide external access to the webserver. The only thing we need to change in the command from the previous session is the `--link` flag, instead we need to launch ngrok in our network:

```
docker run -d --name ngrok --net=pogonw \
  wernight/ngrok \
    ngrok http pogomap:5000
```

To obtain the assigned domain from ngrok, we also need to execute the previous command in our network instead of using links:

```
docker run --rm --net=pogonw \
  appropriate/curl \
    sh -c "curl -s http://ngrok:4040/api/tunnels | grep -o 'https\?:\/\/[a-zA-Z0-9\.
↪]\+'"
```

Inspecting the containers

If at any moment you would like to check what containers are running, you can execute:

```
docker ps -a
```

If you would like more detailed information about the network, such as its subnet and gateway or even the ips that were assigned to each running container, you can execute:

```
docker network inspect pogonw
```

Setting up notifications

If you have a docker image for a notification webhook that you want to be called by the server/workers, such as PokeAlarm, you can launch such container in the 'pogonw' network and give it a name such as 'hook'. This guide won't cover how to do that, but once such container is configured and running, you can stop your server/workers and relaunch them with the added flags: `-wh`, `--wh-threads` and `--webhook-updates-only`. For example, if the hook was listening to port 4000, and we wanted 3 threads to post updates only to the hook:

```
docker run -d --name pogomap --net=pogonw -p 5000:5000 \
  pokemap/pokemongo-map \
    -a ptc -u username -p password \
    -k 'your-google-maps-key' \
    -l 'lat, lon' \
    -st 5 \
    --db-type mysql \
    --db-host db \
    --db-port 3306 \
    --db-name pogodb \
    --db-user root \
    --db-pass yourpassword \
    -wh 'http://hook:4000' \
    --wh-threads 3 \
    --webhook-updates-only
```

CHAPTER 13

Community Tools

Some useful tools made by the community for the community

PTC Account Generator

An automation script that can create any number of Nintendo Pokémon Trainer Club accounts

Used to generate any desired number of PTC accounts - TOS verifies them and includes a google script that can be used to verify all the emails. Outputs generated account information in .csv format.

Cor3Zer0's Map Calculator

Calculator that helps in the creation of PokemonGo Map

Used to calculate optimized flags for particular use cases given a set situation. *Example: I have an ST of 7, a delay of 10, and need my scan to be around 100 seconds. How many accounts should I use?*

HoneySpots - Easy Multi-account-Multi-location generator

Saves users a ton of tedious work - allows completely customized file generation and control.

Constantly in development - but allows the generation of a multi-worker .bat file with ease, along with custom flags. Can read account and location data right off a .csv file (no need to edit the files either - just set the right columns) and allows you to customize everything from the starting parameters to the naming of each instance through an easily configurable config.ini. *Example: I need to search a few small areas very very quickly with accounts I've generated through the* PTC Acc Gen *Example: I have a list of locations and a list of accounts, but I don't want to go through the tedium of having to create the .bat myself*

CHAPTER 14

Spawnpoint Scanning

If you already have a large number of known spawnpoints it may be worth looking into Spawnpoint Scanning

Spawnpoint Scanning consists of only scanning an area in which a spawn has recently happened, this saves a large number of requests and also detects all spawns soon after they appear instead of whenever the scan gets round to them again

Spawnpoint Scanning is particularly useful in areas where spawns are spread out

Spawnpoint Scanning can be run in one of three different modes:

Scans based on database

```
python runserver.py -ss -l YOURLOCATION -st STEPS
```

Where YOURLOCATION is the location the map should be centered at and also the center of the hex to get spawn locations from, -st sets the size of the clipping hexagon (hexagon is the same size as the scan of the same -st value)

This is particularly useful for when using a beehive

Note: when using the mode when not in a beehive, it is recommended to use an -st value one higher than the scan was done on, to avoid very edge spawns being clipped off

Dump scans from database then use the created file

```
python runserver.py -ss YOURFILE.json -l YOURLOCATION -st STEPS --dump-spawnpoints
```

Where YOURFILE.json is the file containing all the spawns, YOURLOCATION is the location the map should be centered at and also the center of the hex to get spawn locations from and -st sets the size of the clipping hexagon (hexagon is the same size as the scan of the same -st value)

This mode is mainly used for switching from database mode to spawnFile mode, and can also be used simply for dumping all spawns to file (use a very large -st and close the program once it has created the file)

Scans based on file

```
python runserver.py -ss YOURFILE.json -l YOURLOCATION
```

Where YOURFILE.json is the file containing all the spawns, and YOURLOCATION is the location the map should be centered at (YOURLOCATION is not used for anything else in this mode)

Note: in this mode -st does nothing

Getting spawns

for generating the spawns to use with Spawnpoint Scanning it is recommended to scan the area with a scan that completes in 10 minutes for at least 1 hour, this should guarantee that all spawns are found

spawn files can also be generated with an external tool such as spawnScan

CHAPTER 15

Apache2 Reverse Proxy

If you do not want to expose pokemongo-map to the web directly or you want to place it under a prefix, follow this guide:

Assuming the following:

- You are running pokemongo-map on the default port 5000
- You've already made your machine available externally

1. Install Apache2 – plenty of tutorials on the web for this.
2. Enable the mods needed

```
sudo a2enmod proxy proxy_http proxy_connect ssl rewrite
```

3. Create a file /etc/apache2/sites-available/pokemongo-map.conf

```
sudo nano /etc/apache2/sites-available/pokemongo-map.conf`
```

copy pasta:

```
<VirtualHost *:80>

    ServerName pokemongo.yourdomain.com

    ProxyPass / http://127.0.0.1:5000/
    ProxyPassReverse / http://127.0.0.1:5000/

    RewriteCond %{HTTP_HOST} !^pokemongo\.yourdomain\.com$ [NC]
    RewriteRule ^/$ http://%{HTTP_HOST}/ [L,R=301]

    ErrorLog ${APACHE_LOG_DIR}/error.log
    CustomLog ${APACHE_LOG_DIR}/access.log combined

</VirtualHost>

<VirtualHost *:443>

    ServerName pokemongo.yourdomain.com

    ProxyPass / http://127.0.0.1:5000/
    ProxyPassReverse / http://127.0.0.1:5000/

    RewriteCond %{HTTP_HOST} !^pokemongo\.yourdomain\.com$ [NC]
```

```
    RewriteRule ^/$ http://%{HTTP_HOST}/ [L,R=301]

    ErrorLog ${APACHE_LOG_DIR}/error.log
    CustomLog ${APACHE_LOG_DIR}/access.log combined

    SSLCertificateFile /var/www/ssl_keys/yourcert.crt
    SSLCertificateKeyFile /var/www/ssl_keys/yourkey.key
    SSLCertificateChainFile /var/www/ssl_keys/yourintermediatecert.crt

</VirtualHost>
```

If you want your maps at `pokemongo.yourdomain.com`, keep it just like it is If you want your maps at `yourdomain.com/go/` (note the trailing slash!)

```
(take out ServerName)
ProxyPass /go/ http://127.0.0.1:5000/
ProxyPassReverse /go/ http://127.0.0.1:5000/

RewriteCond %{HTTP_HOST} !^yourdomain\.com/go/$ [NC]
RewriteRule ^/go/$ http://%{HTTP_HOST}/go/ [L,R=301]
```

4. Test your Apache2 config: `sudo apachectl configtest`
5. Enable your new config: `sudo a2ensite pokemongo-map`
6. Reload your Apache2 service: `service apache2 reload`
7. You can now access it by going to: `http(s)://yourdomain.com/go` or `http(s)://pokemongo.yourdomain.com`

CHAPTER 16

Beehive

Visual Representation

Get Ready

The beehive script works by specifying only the parameters that are different for each worker on the command line. All other parameters are taken from the config file.

To ensure that your beehive will run correctly, first make sure that you can run purely from the config file:

```
python runserver.py
```

If this runs ok, you should be good to go!

Get Set

Open a Terminal or Command Window to the Tools / Hex Beehive Generator directory:

```
cd PokemonGo-Map/Tools/Hex-Beehive-Generator/
```

Now generate coordinates with `location_generator.py`:

NOTE: Carefully read these instructions for the proper arguments.

```
python location_generator.py -st stepsize -lp ringsize -lat yourstartinglathere -lon␣
↪yourstartinglonghere
```

For example:

```
python location_generator.py -st 5 -lp 4 -lat 39.949157 -lon -75.165297
```

This will generate a beehive.bat (or beehive.sh for non-Windows) file in the main map directory.

GO!

Run the .bat/.sh file to start the workers.

Troubleshooting

If your instances start but then immediately stop, take each line and run the part after /MIN starting with the python path. This will stop the window from automatically closing so that you can see what the actual error is.

CHAPTER 17

Windows ENV Fix

A common error is:

```
'python' is not recognized as an internal or external command, operable program or␣
↪batch file.
```

or:

```
'pip' is not recognized as an internal or external command, operable program or batch␣
↪file.
```

Luckily for you, this error is easy to solve!

What's wrong:

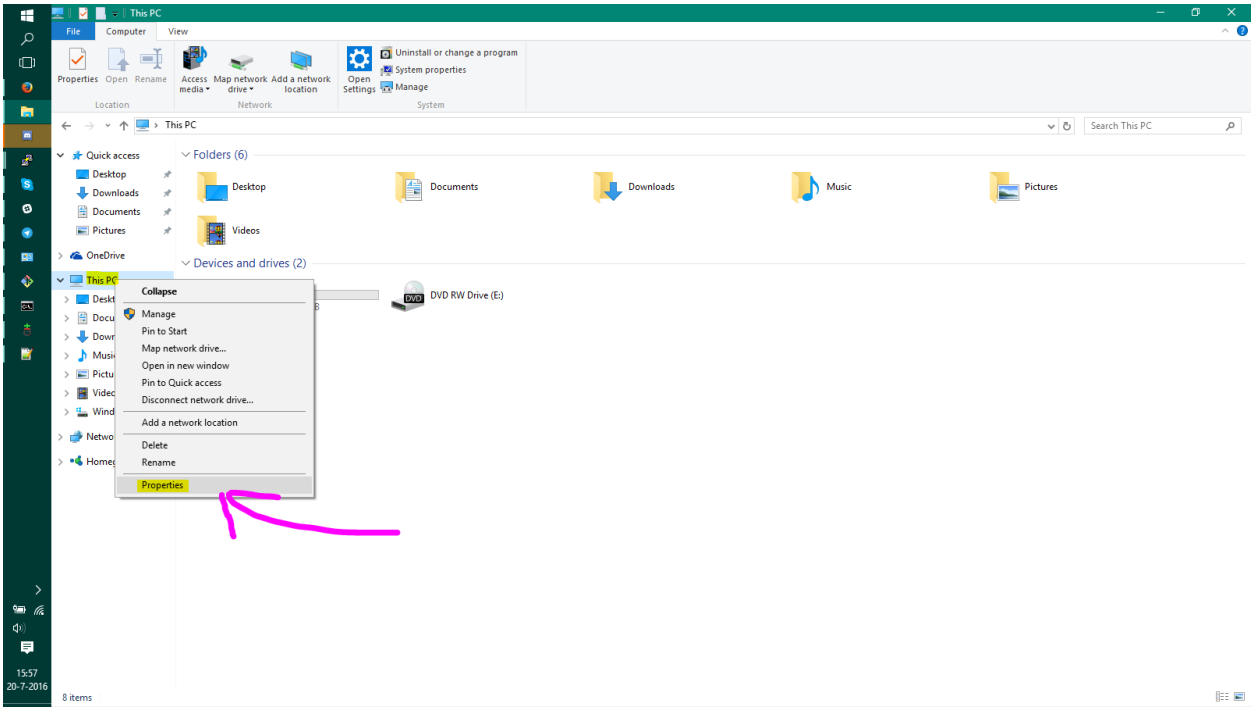
Windows defines commands in something called "environment variables", if a program isn't here, Windows doesn't understand what you mean.

How to solve this:

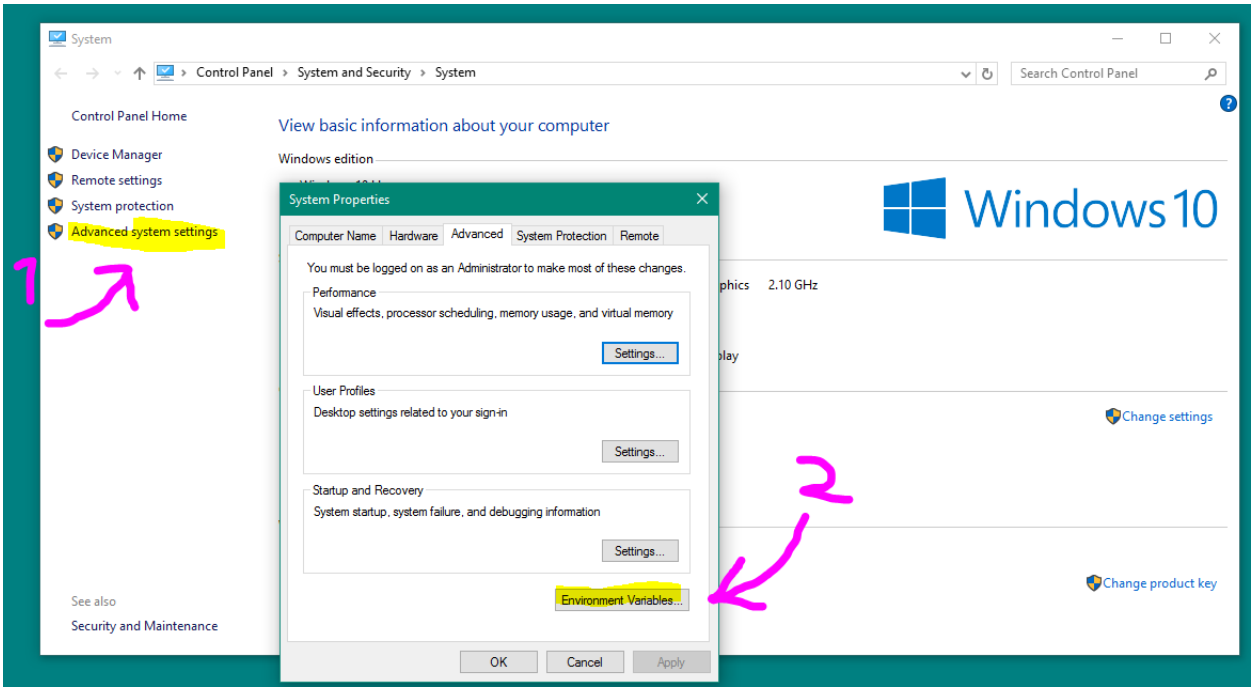
If you install python, it can automatically set the correct environment variables. However, if you didn't enable this feature, you need to do it manually.

How to set them manually:

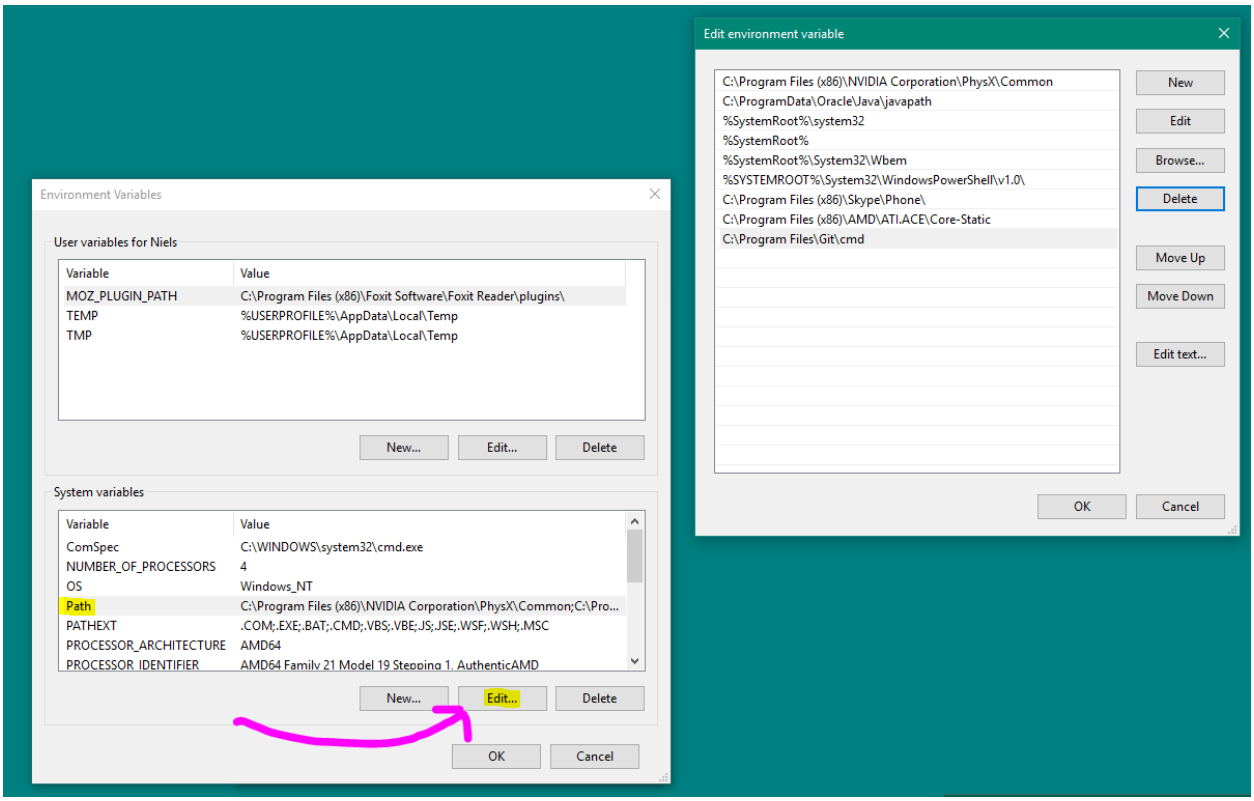
Step 1] Press the WindowsKey + Pause/Break (Or right click on "This PC" and select properties)



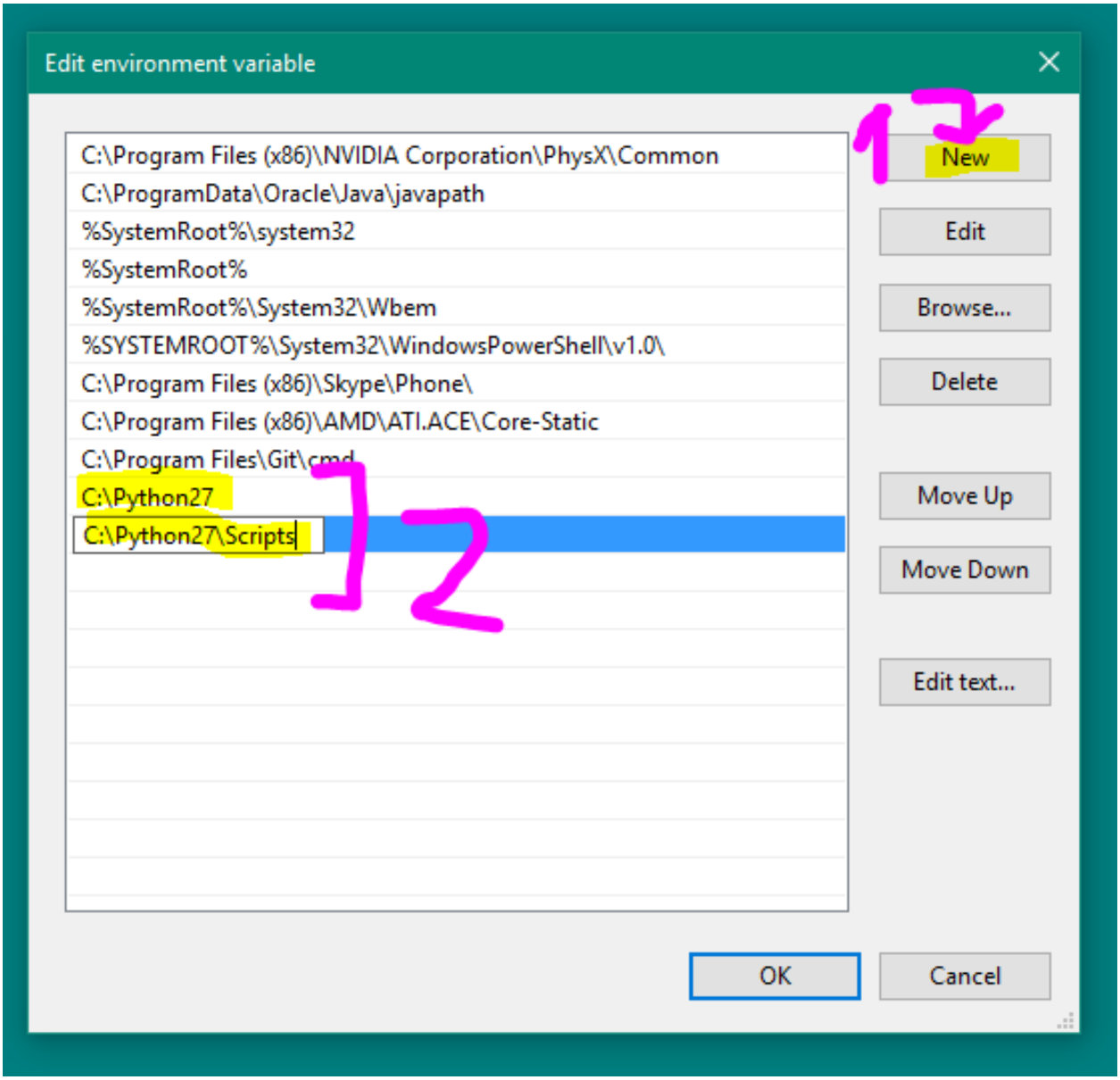
Step 2] Click on “Advanced system settings”, a new window will appear. Now click “Environment Variables”



Step 3] Another window will pop up, now find “Path” and click “Edit...”, then another window will pop up.



Step 4] Hit “New” and enter “C:\Python27”, hit “New” again and now enter “C:\Python27\Scripts”



Step 5] Close all windows by pressing "OK" and restart the command prompt, now everything should be working fine!

Credit: Langoor2

CHAPTER 18

External Access to Map

Introduction

This guide will show you how to make your map available on the internet, including yourself on the go. These instructions should **not** be used on a server you are giving out to other people for use, as it is not the most secure option available. **We are not responsible for damage caused to your software, equipment, or anything else, proceed at your own risk.**

This guide will most likely not match your router exactly, as different manufacturers have different software and configuration. This is meant to be a general guide as many routers have a lot in common, but if you can't follow these following instructions, try Googling something like "Port forwarding [*MY ROUTER MODEL*]"

Gathering Information

First we should find some information about your network. Press `Win+R` and type "cmd" on Windows to open a Command Prompt. On Linux and OS X, open a Terminal application.

On Windows, enter the following command:

```
ipconfig
```

On Linux and OS X, enter:

```
ifconfig
```

A lot of information will appear on your screen, but these two lines are what we're looking for:

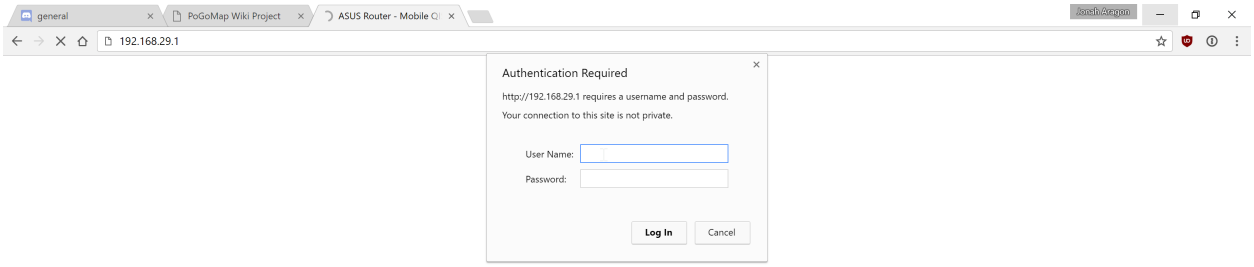
```
IPv4 Address. . . . . . . . . . . : 192.168.29.22
Default Gateway . . . . . . . . . : 192.168.29.1
```

Obviously, your numbers (IP Addresses) will most likely look different from mine. Jot those two down so we can use them later.

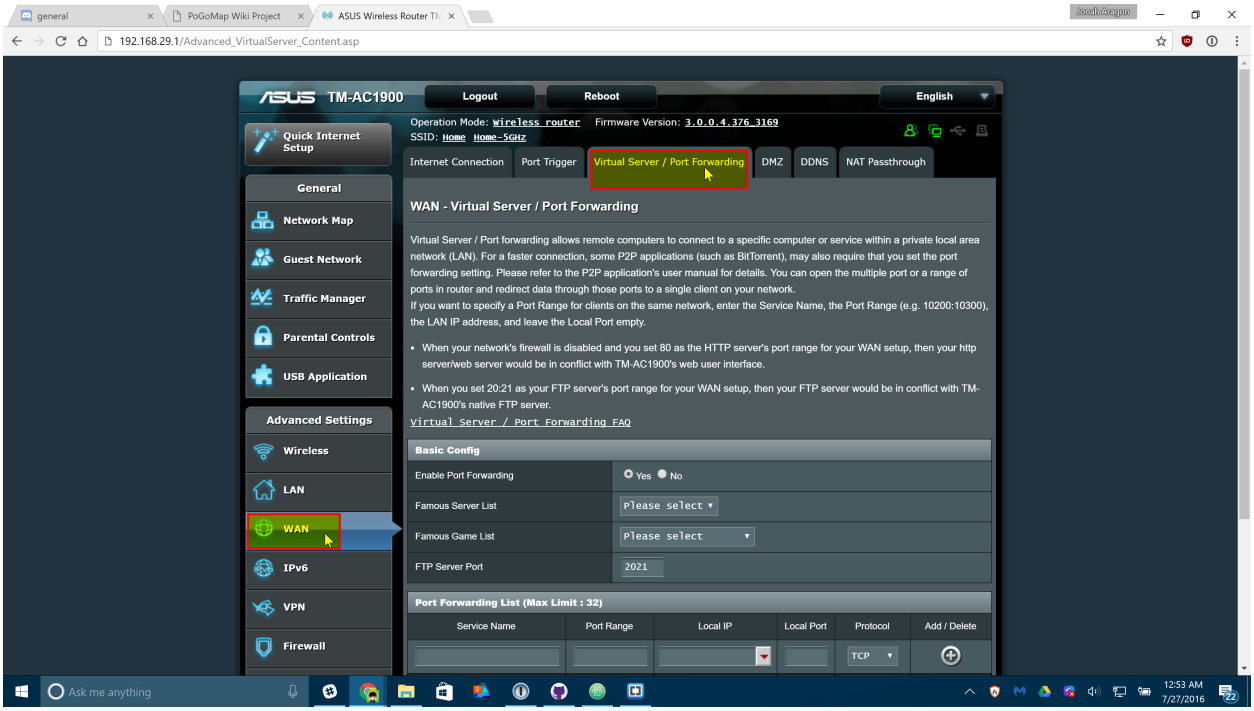
Let's also find your Public IP address, browse to mxtoolbox.com/whatismyip and note the IP Address it gives you there.

Port Forwarding

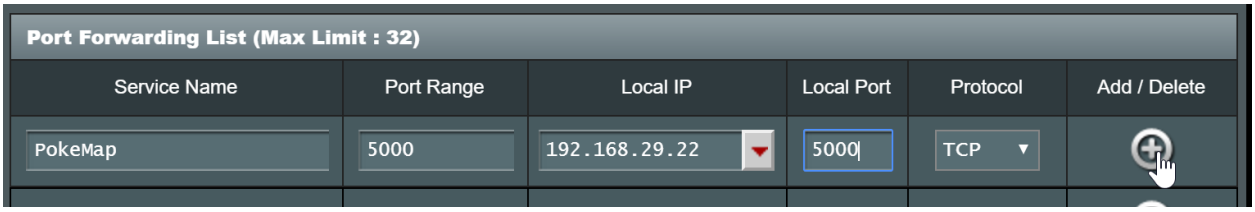
Open an internet browser and type in the "Default Gateway" IP address we just found in the last step. It may ask you to login at this point, enter the login credentials for your router. It is important to note that this generally isn't your wifi password, if you don't know your router login credentials, they are usually on the bottom of the router unless they've already been changed.



Now you should be on the homepage of your router's configuration. Find the Port Forwarding section of your router. On mine it was under "WAN" > "Virtual Server / Port Forwarding" but yours may differ.



Enter the following information on that screen. Some routers may make you press a menu before you can see these text boxes:



Replace "Local IP" (sometimes called "Internal IP") with the IPv4 Address we found in the first step of this guide. Both port boxes should have the same number, 5000. If you only have one box for ports just enter "5000" in that one. Click the Add button to save your settings. If you have an option to choose from UDP or TDP, choose TDP.

Finishing Up

Your port should now be added! Next time you start your server, add `-H 0.0.0.0` to the list of flags so it's accessible from the internet!

Connecting

In any web browser not connected to your wifi, your phone for instance, browse to `http://11.22.33.44:5000/` **replacing** 11.22.33.44 with your external IP address, and you should be set!

Note: It is a known bug that Safari on iOS may not be able to load the map, if this happens to you download Chrome from the app store.

CHAPTER 19

Common Questions and Answers

Can I sign in with Google?

Yes you can! Pass the flag `-a google` (replacing `-a ptc`) to use Google authentication.

If you happen to have 2-step verification enabled for your Google account you will need to supply an app password for your password instead of your normal login password.

...expected one argument.

The -dp, -dg -dl, -i, -o and -ar parameters are no longer needed. Remove them from your query.

How do I setup port forwarding?

See this helpful guide

"It's acting like the location flag is missing.

`-l`, never forget.

example.py isn't working right

10/10 would run again

I'm getting this error...

```
pip or python is not recognized as an internal or external command
```

Python/pip has not been added to the environment or pip needs to be installed to retrieve all the dependencies

```
Exception, e <- Invalid syntax.
```

This error is caused by Python 3. The project requires python 2.7

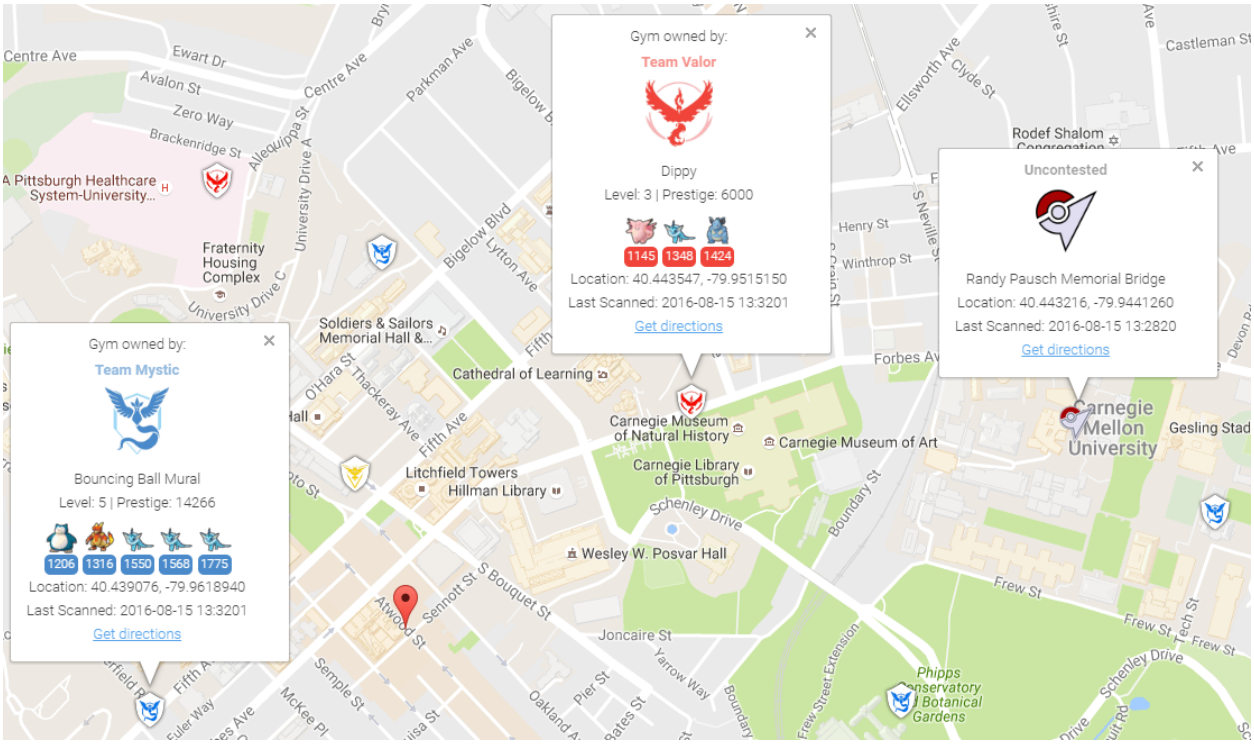
```
error: command 'gcc' failed with exit status 1

# - or -

[...]failed with error code 1 in /tmp/pip-build-k3oWzv/pycryptodomex/
```

Your OS is missing the `gcc` compiler library. For Debian, run `apt-get install build-essentials`. For Red Hat, run `yum groupinstall 'Development Tools'`

Detailed Gym Information



To collect all of the available information about gyms, you can enable gym info parsing.

Gym info parsing adds the gym's name and a list of all the Pokemon currently in the gym to the GUI. However, this comes at a slight cost: An extra API call is made for each gym to be updated, which slows the overall scan speed. Gym information is parsed intelligently, and only updates if something about the gym has changed since it was last updated.

MySQL Recommended

Because of the increased data being sent to the database, it is recommended to use MySQL when using this feature.

Note on Non-Latin Characters in MySQL

Using out of the box settings, MySQL uses a collation/encoding that does not support non-Latin characters. If gyms in your area are displaying with `????` instead of the correct characters, you need to update your database server's collation and encoding to use UTF8. To correct just the gym names, run:

```
ALTER TABLE `gymdetails` COLLATE='utf8_general_ci', CONVERT TO CHARSET utf8;
```

As gym details are refreshed, the correct characters will appear (to force this, you can empty `gymdetails`). More information regarding MySQL encoding is available here.

Enabling Gym Information Parsing

To enable gym parsing, run with the `-gi` argument:

```
python runserver.py -gi
```

Or update your config.ini:

```
gym-info:true            # enables detailed gym info collection (default false)
```

New Webhook

When gym info parsing is enabled, gym details will be sent to webhooks. A sample webhook is below for reference:


```
{
    "message": {
        "id": "4b432a31c3c247e5b0f7656d09e2c050.11",
        "url": "http://lh3.ggpht.com/yBqXtFfq3nOlZmLc7DbgSIcXcyfvsWfY3VQs_
↪gBziPwjUx7xOfgvucz6uxP_Ri-ianoWFt5mgJ7_zpsa7VNK",
        "name": "Graduate School of Public Health Sculpture",
        "description": "Sculpture on the exterior of the Graduate School of Public␣
↪Health building.",
        "team": 1,
        "latitude": 40.442506,
        "longitude": -79.957962,
        "pokemon": [{
            "num_upgrades": 0,
            "move_1": 234,
            "move_2": 99,
            "additional_cp_multiplier": 0,
            "iv_defense": 11,
            "weight": 14.138585090637207,
            "pokemon_id": 63,
            "stamina_max": 46,
            "cp_multiplier": 0.39956727623939514,
            "height": 0.7160492539405823,
            "stamina": 46,
            "pokemon_uid": 9278614152997308833,
            "iv_attack": 12,
            "trainer_name": "SportyGator",
            "trainer_level": 18,
            "cp": 138,
```

```
            "iv_stamina": 8
        }, {
            "num_upgrades": 0,
            "move_1": 234,
            "move_2": 87,
            "additional_cp_multiplier": 0,
            "iv_defense": 12,
            "weight": 3.51259708404541,
            "pokemon_id": 36,
            "stamina_max": 250,
            "cp_multiplier": 0.6121572852134705,
            "height": 1.4966495037078857,
            "stamina": 250,
            "pokemon_uid": 6103380929145641793,
            "iv_attack": 5,
            "trainer_name": "Meckelangelo",
            "trainer_level": 22,
            "cp": 1353,
            "iv_stamina": 15
        }, {
            "num_upgrades": 9,
            "move_1": 224,
            "move_2": 32,
            "additional_cp_multiplier": 0.06381925195455551,
            "iv_defense": 13,
            "weight": 60.0,
            "pokemon_id": 31,
            "stamina_max": 252,
            "cp_multiplier": 0.5974000096321106,
            "height": 1.0611374378204346,
            "stamina": 252,
            "pokemon_uid": 3580711458547635980,
            "iv_attack": 10,
            "trainer_name": "Plaidflamingo",
            "trainer_level": 23,
            "cp": 1670,
            "iv_stamina": 11
        }]
    },
    "type": "gym_details"
}
```

CHAPTER 21

Using Multiple Accounts

PokemonGo-Map supports using multiple accounts to run a worker with multiple threads.

Using Command Line Arguments:

To use multiple accounts when running from the command line, you must specify multiple -u and -p values.

Example: `python runserver.py -u thunderfox01 -u thunderfox02 -p thunderfox01 -p thunderfox02`

If you have multiple accounts with the same password, you can specify one -p value. PokemonGo-Map will use the value for all specified accounts.

Example: `python runserver.py -u thunderfox01 -u thunderfox02 -p thunderfox`

If you have multiple accounts with different auth services, you can specify multiple -a values.

Example: `python runserver.py -a ptc -a ptc -a google -u thunderfox01 -u thunderfox02 -u thunderfox03@gmail.com -p thunderfox01 -p thunderfox02 -p thunderfox03`

Using config.ini

To use multiple accounts with config.ini, you must surround all the accounts and passwords in brackets [] and seperate them with a comma and space.

Example:

```
username: [thunderfox01, thunderfox02]
password: [password01, password02]
```

If you have multiple accounts with the same password, you can specify one password value similar to the command line.

Example:

```
username: [thunderfox01, thunderfox02]
password: password
```

If you have multiple accounts using Google and PTC, you can specify auth-service for each account.

Example:

```
auth-service: [ptc, ptc, google]
username: [thunderfox01, thunderfox02, thunderfox03@gmail.com]
password: [password01, password02, password03]
```

Using CSV file:

To use multiple accounts from a CSV file, you create a CSV file with the auth method, username and password on each line. Additional fields after the password are ignored.

CSV File Example:

```
ptc,thunderfox01,password01
ptc,thunderfox02,password02,other,information
```

Example: `python runserver.py -ac accounts.csv`

CHAPTER 22

Using a MySQL Server

This is a guide for windows only currently. Preliminary Linux (Debian) instructions below (VII) Preliminary Docker (modern Linux OS w/ Docker & git installed) instructions below (VIII)

** Updated for commit 775982e **

I. Prerequisites

1. Have already ran/operated the PokemonGo-Map using the default database setup.
2. Have the "develop" build of PokemonGo-Map. Available here.
3. Downloaded MariaDB

II. Installing MariaDB

1. Run the install file, for me this was: mariadb-10.1.16-winx64.msi
2. Click next
3. Check "I accept the terms in the License Agreement" and click next
4. If you wish to change the installation location do that. If not click next.
5. Decide whether or not you want a password on your root account, if you don't put a password on it this database cannot be accessed from remote machines, which isn't necessary for what were doing. But if you do want a password go to 5a, if not go to 5b.
    - **5a.** Input the password you want into "new root password", and again into the "confirm" textbox.
    - **5b.** Uncheck "modify password for database user 'root'.
6. Click next
7. All the default options are acceptable here. Hit next.
8. This screen wants to know if you can submit anonymous usage data, feel free to hit next or if you'd like to contribute data go ahead and check "enable the Feedback plugin and submit anonymous usage information" and then click next.
9. Click install. Administrator privileges required.
10. Congratulations you've installed MariaDB and it's all downhill from here.

III. Setting up your database

1. Go to your windows start menu and locate MariaDB.
2. Open "MySQL Client"
3. If you created a password in step 5a above enter it now and hit enter. If you didn't create a password simply hit enter.
4. One this command prompt screen you'll want to enter:

```
CREATE DATABASE pokemongomapdb;
CREATE USER 'pogomapuser'@'localhost' IDENTIFIED BY 'password';
GRANT ALL PRIVILEGES ON pokemongomapdb . * TO 'pogomapuser'@'localhost';
exit
```

   You can change `pokemongomapdb` to whatever you want the name of the database to be.

5. If the database creation was successful it will tell you "Query OK, 1 row affected". If it doesn't echo that back at you then you either received an error message, or it just created a blank line. I've detailed how to fix common errors, and the blank line below.
   - **Blank line:** You simply missed the ";" in the CREATE DATABASE command. Essentially you didn't close of the line, so the program thinks you still have more information to input. Simply insert a ; onto the blank line and hit enter and it should echo "Query OK" at you.
   - **Error: "ERROR 1064 (42000): You have an error in your SQL syntax"** Double check that you put in the CREATE DATABASE command exactly as it's typed above. If you had the blank line error, and then retyped the CREATE DATABASE line it will spit this at you because you actually typed `CREATE DATABASE pokemongomapdb CREATE DATABASE pokemongomapdb;`. Simply retry the `CREATE DATABASE pokemongomapdb;` and don't forget your `;`.
   - **Error: "ERROR 1007 (HY000): Can't create database 'pokemongomapdb'; database exists"** The pokemongomapdb database already exists. If you're trying to start a fresh database you'll need to execute `DROP DATABASE pokemongomapdb`, and then run `CREATE DATABASE pokemongomapdb`. If you want to keep the pokemongomapdb but start a new one, change the name.
6. Congratulations, your database is now setup and ready to be used.

IV. Setting up the Config.ini file & Editing utils.py

Config.ini

1. Open file explorer to where you've extracted your develop branch of PokemonGo-Map
2. Navigate to the "config" folder.
3. Right-click and open config.ini in your text editor of choice. I used Notepad++.
4. You're looking to fill in all the values in this file. If you've already ran and used the PokemonGo-Map like was required in step 1 of the prerequisites you should be familiar with most of this information, but I've broken it all down below. On every line that you change/add a value make sure you remove the # as that makes the program think it is a comment, which obviously ignores the values you input.
   - **Authentication Settings:** You'll need to pick between using google, or pokemon trainer club login information. The PokemonGo-Map initial setup recommends ptc.
     - Change "auth-service" to ptc or google, whichever you choose.

  - Change "username" to your respective username for the selected service.
  - Change "password" to your respective password for the username on the selected service.
- **Database Settings:** This is the important section you will want to modify.
  - Change the "db-type" to "mysql"
  - Change "db-host" to "127.0.0.1"
  - Change "db-name:" to "pokemongomapdb"
  - Change "db-user:" to "pogomapuser"
  - Change "db-pass" to the password you chose in section III step 4, or leave it blank if you chose to roll with no password.
- **Search Settings:** You only need to change this if you want to only run one location, or wish to disable gyms/pokemon/pokestops for all locations, or to have a universal thread count, scan delay, or step limit. I chose to not edit anything in the new config.ini.
- **Misc:** This only has one setting and that's the google maps api key. If you don't have one, or don't know what that is please see this wiki page for the PokemonGo-Map project.
  - Change "gmaps-key:" to contain your google maps API key.
- **Webserver Settings:** This is how your server knows where to communicate.
  - Change "host" to the host address you should already have setup.
  - Change "port" is whatever port you are running the map through, default is 5000.

5. Make sure you've removed all of the # from any line with a value you inputted. Indent the comments that are after the values as well, so they are on the following line below the variable they represent. For example:

```
# Database settings
db-type: mysql
# sqlite (default) or mysql
```

6. Go to File->Save as... and make sure you save this file into the same directory as the "config.ini.example", but obviously save it as "config.ini". Make sure it's saved as a .ini file type, and not anything else or it won't work.
7. You're now done configuring your config.ini file.

V. Run it!

Now that we have our server setup and our config.ini filled out it's time to actually run the workers to make sure everything is in check. Remember from above if you commented out any parameters in the util.py file that all of those parameters need to be met and filled out when you run the runserver.py script. In our case we commented out location, and steps so we could individual choose where each worker scanned, and the size of the scan. I've put two code snippets below, one would be used if you didn't comment out anything and instead filled out the **[Search_Settings]** in section IV step 4 above. The other code snippet is what you would run if you commented out the same lines as I did in our running example.

Filled out Search_Settings

```
python runserver.py
```

Left Search_Settings at default

```
python runserver.py -st 10 -l "[LOCATION]"
```

You should now be up and running. If you've encountered any errors it's most likely due to missing a parameter you commented out when you call runserver.py or you mis-typed something in your `config.ini`. However, if it's neither of those issues and something not covered in this guide hop into the PokemonGoDev discord server, and go to the help channel. People there are great, and gladly assist people with troubleshooting issues.

VI. Final Notes & Credits

Final Notes

As just some quick closing notes, if you've encountered any problems or issues with this guide or find it needs to be updated please don't hesitate to let me know. I am normally always in the PokemonGoDev discord channels, or you can contact me by other means. I really hope this guide goes a long way in helping others, because I know I was confused when I tried to get the mysql servers setup and without the help I received I would have never got this setup, or this guide written.

Credits

I'd just like to credit the PokemonGoDev channel on discord and the many people who have helped me in the past few days. I've learned a lot, and while I used to hobby program I just haven't been able to dig deep into this project. So without the help of the guys in Discord this guide wouldn't have been possible. So shout out to all of them, because well frankly tons of people helped me at various points along my way.

I'd also like to specifically credit Znuff2471 on discord for their great assistance, definitely one of the main contributors to helping me set this all up.

VII. Linux Instructions

1. Visit https://downloads.mariadb.org/mariadb/repositories/ and download mariaDB
2. Login to your MySQL DB
   - mysql -p
   - Enter your password if you set one
3. Create the DB

- CREATE DATABASE pokemongomapdb;
- CREATE USER 'pogomapuser'@'localhost' IDENTIFIED BY 'password';
- GRANT ALL PRIVILEGES ON pokemongomapdb . * TO 'pogomapuser'@'localhost';

1. Quit the MySQL command line tool `quit`
2. Edit the `config/config.ini` file

```
# Database settings
db-type: mysql          # sqlite (default) or mysql
db-host: 127.0.0.1      # required for mysql
db-name: pokemongomapdb # required for mysql
db-user: pogomapuser    # required for mysql
db-pass: YourPW         # required for mysql
```

VIII. Docker Settings w/ Let's Encrypt

Note: These are preliminary until better Docker support in the official container hosted on Docker Hub Note: These commands require git to be installed

```
docker build -t pokemap https://github.com/PokemonGoMap/PokemonGo-Map.git:develop
docker run --name pokesql -e MYSQL_ROOT_PASSWORD=some-string -e MYSQL_DATABASE␣
↪pokemap -d mysql:5.6
```

only pain comes from mysql5.7 and beyond

```
docker run --name mainmap -d --link pokesql pokemap --auth-service=ptc \
  --username=youruser --password=yourpassword --db-type=mysql --db-host=pokesql \
  --db-name=pokemap --db-user=root --db-pass=some-string --gmaps-key=someapikey
```

all optional arguments except db type omitted, including –location (you can set it in the web ui!)

OPTIONAL: always scan Austin, TX (SQL benchmark?)

```
docker run --name scanagent -d --link pokesql pokemap --no-server \
 --auth-service=ptc --location="Austin, TX" --username=yourotheruser \
 --password=yourotherpassword --db-type=mysql --db-host=pokemap \
 --db-name=pokemap --db-user=root --db-pass=some-string \
 --gmaps-key=some-api-key
```

CHAPTER 23

Nginx

If you do not want to expose pokemongo-map to the web directly or you want to place it under a prefix, follow this guide:

Assuming the following:

- You are running pokemongo-map on the default port 5000
- You've already made your machine available externally (for example, port forwarding)

1. Install nginx (I'm not walking you through that, google will assist) - http://nginx.org/en/linux_packages.html
2. In /etc/nginx/nginx.conf add the following before the last }

```
include conf.d/pokemongo-map.conf;
```

3. Create a file /etc/nginx/conf.d/pokemongo-map.conf and place the following in it:

```
server {
    location /go/ {
       proxy_pass http://127.0.0.1:5000/;
    }
}
```

You can now access it by http://yourip/go

Add a free SSL Certificate to your site:

1. https://certbot.eff.org/#debianjessie-nginx
2. For webroot configuration, simplest for this use, do the following:
   - Edit your `/etc/nginx/conf.d/pokemongo-map.conf`
   - Add the following location block:

```
location /.well-known/acme-challenge {
  default_type "text/plain";
  root /var/www/certbot;
}
```

3. Create the root folder above `mkdir /var/www/certbot`
4. Set your permissions for the folder

5. Run `certbot certonly -w /var/www/certbot -d yourdomain.something.com`
6. Certificates last for 3 Months and can be renewed by running `certbot renew`

Example Config

```
server {
    listen       80;
    server_name  PokeMaps.yourdomain.com;

    location /.well-known/acme-challenge {
        default_type "text/plain";
        root /var/www/certbot;
    }

    # Forces all other requests to HTTPS
    location / {
        return      301 https://$host$request_uri;
    }
}

server {
    listen 443 ssl http2;
    server_name PokeMaps.yourdomain.com;

    location /go/ {
        proxy_pass http://127.0.0.1:5000/;
        proxy_redirect off;
    }
}
```

CHAPTER 24

SSL Certificate Windows

Disclaimer: **If you can use letsencrypt, then do so, it is the preffered method for Linux users, Also If you can get achme set up and running on Windows, then use that. If not this guide is for you.**

Part 1: Register at StartSSL

Step 1 browse to:

StartSSL

Step 2 click on Sign-Up:

Step 3 Choose your country and pick an email address to receive a verification code at. **This email should not be disposable**:

Step 4 Enter the verification code that they sent you to your non disposeable email:

Step 5 Now for the sake of easiness lets let the system generate the CSR for us. So in this step pick and confirm a password and then click submit:

Step 6 You should now be at this screen so click download files:

Step 7 A wild certificate is downloaded, you need this to login to www.startssl.com so lets click on it:

Step 8 Click next:

Step 9 Cleck next again:

Step 10 Now enter your password that you chose at www.startssl.com and press next:

Step 11 Click next again:

Step 12 Now click finish:

Step 13 You should now see that the import was successful:

Step 14 Click login now:

Step 15 You will see a box like this come up with your certificate in it that you just imported. Click it then click okay. If prompted for a password enter your password that you used when createing it.

Part 2: Validate Domain

Step 16 Click on validations wizard:

Step 17 It should be on Domain Validation, if so click continue:

Step 18 Enter a domain that you have access to an email address for (webmaster, or admin@domain.com) and press continue:

Step 19 Pick whichever email you have access to and then click send verification code, check your email and paste your verification code then press Validation:

Part 3 Get Your Certificate

Step 20 Once validated click certificates wizard:

Step 21 We should be already on Web Server, if not click it then click continue:

Step 22 You will now see a box like in this image and you will type your validated domain name, if you want to host from a subdomain that is fine too:

Step 23 We will generate our own CSR for this step, open bash, cmd, or git shell on your desktop and enter `openssl req -newkey rsa:2048 -keyout yourname.key -out yourname.csr` just like that for simplicity:

Step 24 It will ask you questions (first being a pass phrase and to confirm that phrase), fill everything out to the best of your ability, if you dont know the answer to something use `.`:

Step 25 When the script is done it will dump the files (yourname.key and yourname.csr) on your desktop:

Step 26 Open yourname.csr with a text editor, I use sublime:

Step 27 Copy and paste it all into StartSSL in the box asking you for the CSR and press submit:

Step 28 It will show you a screen like this, if it says "Click here" then click on the "here" and it will download the certificates in a zipped folder:

Step 29 Wild certificate zip has appeared:

Part 4 Create the .PEM File For the Server

Step 30 Unzip that folder and open it up then unzip the other server folder and open that up it will have the intermediate, root and the certificate within it:

Step 31 We will now combine these certs into one file in a certain way

- Open **your_domain_name.crt** in a text editor and copy it to a **new file**
- Open the **intermediate certificate** in a text editor copy it and paste it in the file directly below **your_domain_name.crt**
- Repeat the same exact thing with the **root certificate** and save this file as `cert.pem` (save it on your desktop) it should look similar to the image below:

Step 32 Now the server needs yourname.key to be unencrypted to be able to function in SSL mode. So we will go back to shell on our desktop and type this `openssl rsa -in yourname.key -out private.key`:

Step 32 Enter the passphrase, if everything went well you will see this:

Step 33 We are pretty much done now you should have these two files on your desktop:

Part 5 Setup the Server

Step 34 Copy and paste these two files to your config folder open your config.ini in a text editor thats not notepad.exe and make the ssl lines look similar to mine (copy the path to each file into your config.ini):

Step 35 You should now be able to run the server in SSL mode if you followed this guide and if I didnt mess up somewhere along the way:

Step 36 Profit!

CHAPTER 25

Status Page

Keeping track of multiple processes and accounts can be a pain. To help, you can use the status page to view the status of each of your workers and their accounts.

Setup

There are two steps to enable the status page:

1. Set a password for the status page by adding the `-spp` argument to each worker running the web service or by setting the `status-page-password` field in `config.ini`. A password is required to enable the status page.
2. Give each of your workers a unique "status name" to identify them on the status page by setting the `-sn` argument.

Accessing

To view your status page, go to `<YourMapUrl>/status` (for example, `http://localhost:5050/status`) and enter the password you defined. The status of each of your workers will be displayed and continually update.

Screenshots

Supervisord on Linux

Assuming:

- You are running on Linux
- You have installed supervisord
- You have seen a shell prompt at least a few times in your life
- You have configured your stuff properly in `config.ini`
- You understand worker separation
- You can tie your own shoelaces

The good stuff

cd into your root PokemonGO Map folder. Then:

```
cd contrib/supervisord/
./install-reinstall.sh
```

When this completes, you will have all the required files. (this copies itself and the required files so that there is no conflict when doing a `git pull`. Now we are going to edit your local copy of gen-workers.sh:

```
cd ~/supervisor
nano gen-workers.sh
```

In this file, change the variables needed to suit your situation. Below is a snippet of the variables:

```
# Name of coords file. SEE coords-only.sh if you dont have one!
coords="coords.txt"

# Webserver Location
initloc="Dallas, TX"
# Account name without numbers
pre="accountname"

# Variables
hexnum=1    # This is the beehive number you are creating. If its the first, or you
 ↪want to overwrite, dont change
worker=0    # This is the worker number. Generally 0 unless 2+ Hives
```

```
acct1=0     # The beginning account number for the hive is this +1
numacct=5   # This is how many accounts you want per worker
pass="yourpasshere" # The password you used for all the accounts
auth="ptc" # The auth you use for all the accounts
st=5        # Step Count per worker
sd=5        # Scan Delay per account
ld=1        # Login Delay per account
directory='/path/to/your/runserver/directory/' # Path to the folder containing␣
↪runserver.py **NOTICE THE TRAILING /**
```

As you saw above you will need to create a coords.txt (or whatever you decide to name it. I personally use city.stepcount.coords as my naming convention). We are going to use location_generator.py:

```
cd (your Pokemon Go Map main folder here)
python Tools/Hex-Beehive-Generator/location_generator.py -lat "yourlat" -lon "yourlon
↪" -st 5 -lp 4 -or "~/supervisor/coords.txt"
```

Now run the gen-workers.sh script

```
cd ~/supervisor
./gen-workers.sh
```

You should now have a bunch of .ini files in `~/supervisor/hex1/`

You can now do:

```
supervisord -c ~/supervisor/supervisord.conf
```

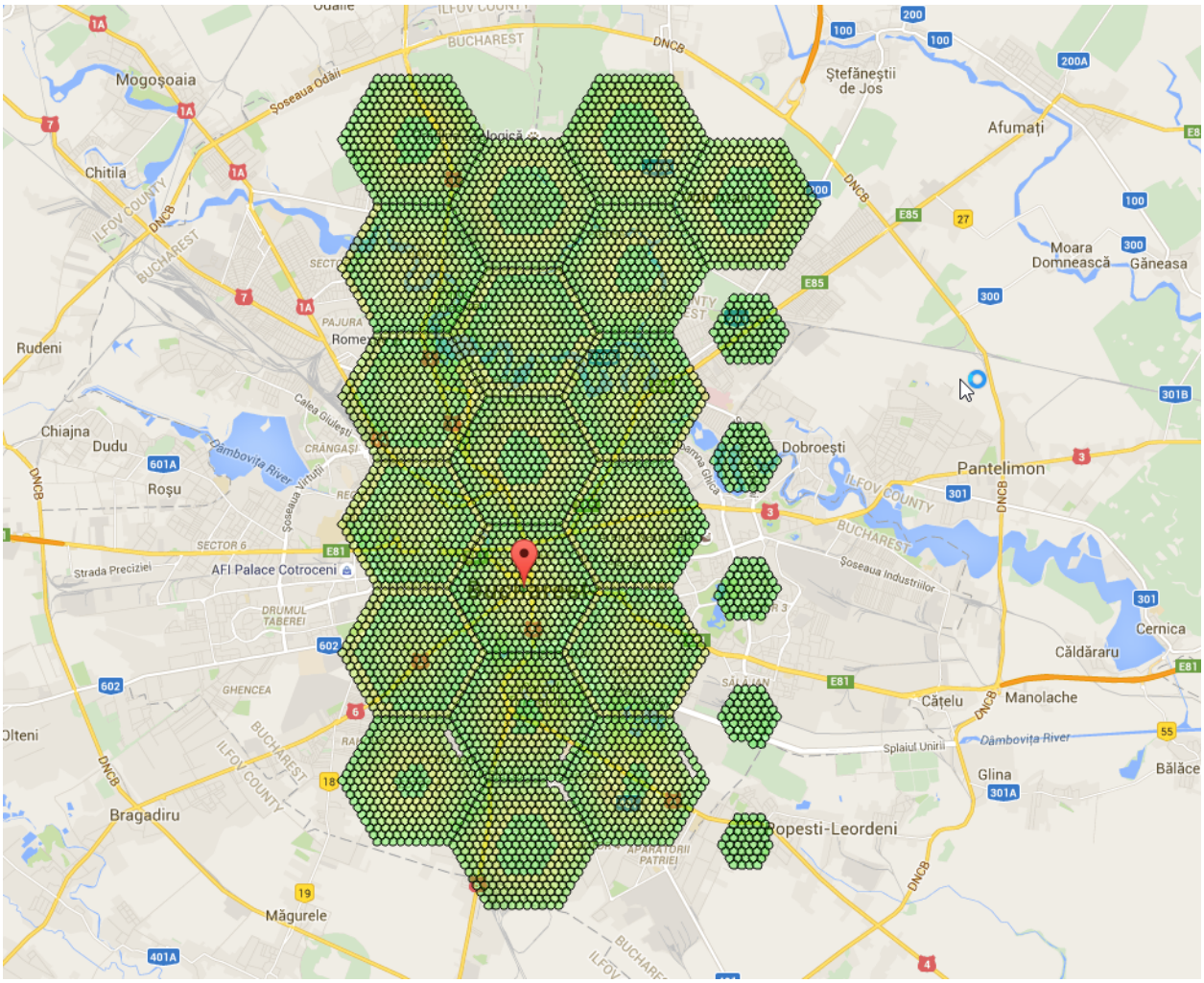
And you will have a working controllable hive! You should be able to see from the web as well at `http://localhost:5001` Read up on the supervisord link at the top if you want to understand more about supervisorctl and how to control from the web.

CHAPTER 27

Workers

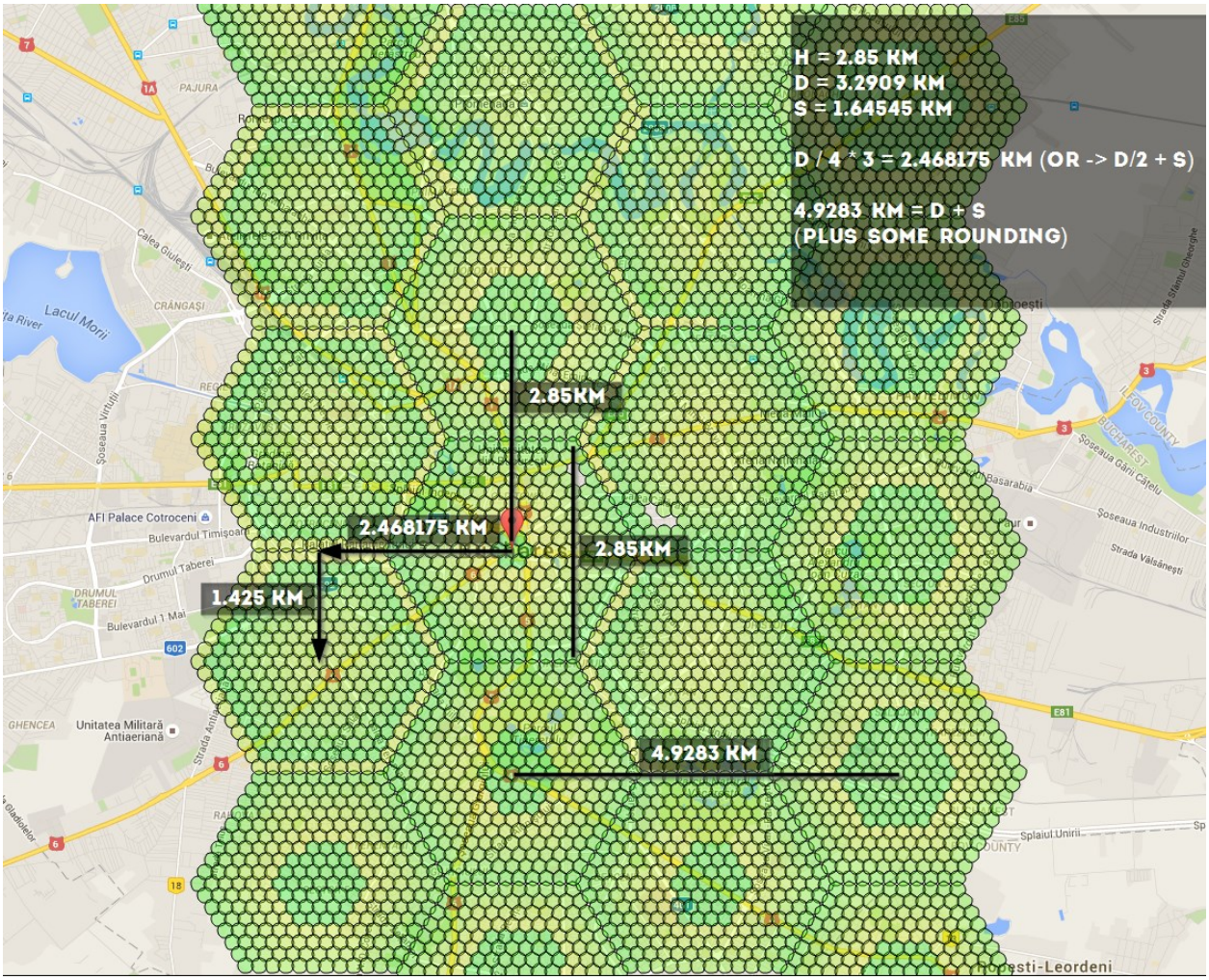
(work in progress)

So, you want to do this:



if using -st 10, these are the numbers you should know: 4.9283 km, 1.425 km, 2.468175 km, 2.85 km - you can use the distances to calculate coords here http://www.sunearthtools.com/tools/distance.php

Distances:



Link to figure out how to link all the hexagons together: http://goo.gl/X81fZq

contributed by olathurl from discord

Here's a half-arsed implementation of reverse Haversine for you to finish off

It outputs the commands for scanning, and then prints the command to start the web server

```
# coding: utf8
import math

# Earth's radius, sphere
R = 6378.1
username = "XXXXXX"
password = "XXXXXX"

cmd = "python runserver.py -ns -l '{lat} {lon}' --port {port} -u {username} -st 10 -p
↪{password} &"
cmd_final = "python runserver.py -l '{lat} {lon}' -u {username} -st 10 -p {password} -
↪st 10 -t 0 &"
```

```
# starting point
sham = (-33.8961, 151.1543)
lat = sham[0]
lon = sham[1]

# offsets in km
d = 2.85
brng = 90

# scan initial location
port = 6001
print cmd.format(lat=lat, lon=lon, port=port, username=username, password=password)

for i in range(5):
    port = port + 1
    # // Coordinate offsets in radians
    lat1 = math.radians(lat)  # Current lat point converted to radians
    lon1 = math.radians(lon)  # Current long point converted to radians

    lat2 = math.asin(math.sin(lat1) * math.cos(d / R) +
                     math.cos(lat1) * math.sin(d / R) * math.cos(brng))

    lon2 = lon1 + math.atan2(math.sin(brng) * math.sin(d / R) * math.cos(lat1),
                             math.cos(d / R) - math.sin(lat1) * math.sin(lat2))

    lat2 = math.degrees(lat2)
    lon2 = math.degrees(lon2)

    print cmd.format(lat=lat2, lon=lon2, port=port, username=username,␣
↪password=password)

    lat = lat2
    lon = lon2


print cmd_final.format(lat=sham[0], lon=sham[1], username=username, password=password)
```