



Setting up an Open Speech Recording Website

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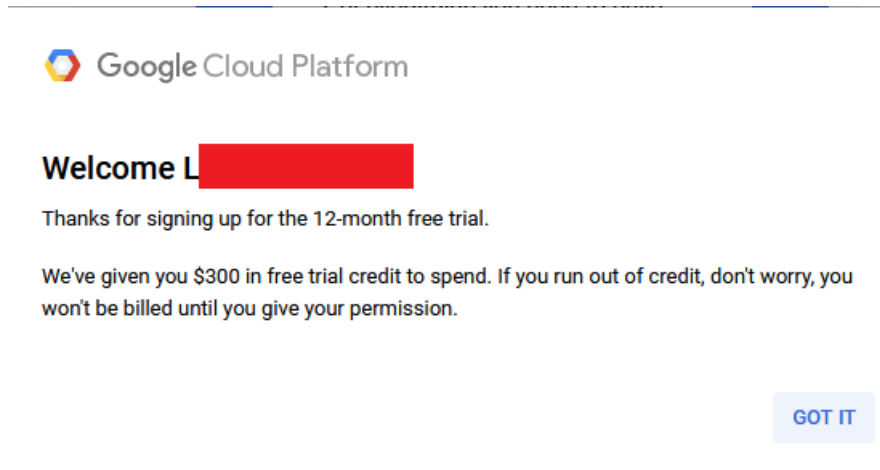
Overview

If you've played with the TensorFlow Lite microspeech model, you will quickly get a little tired of the same word pairs that it comes with. There's just so much yes/no before you want to create your *own* wake/watch words!

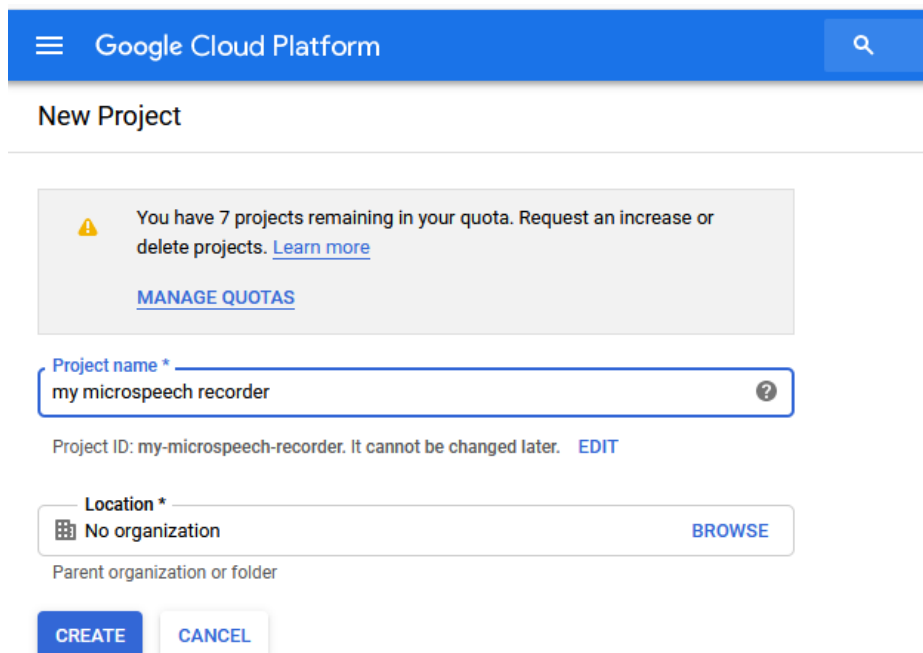
This guide will show you how to setup your own Open Speech Recording website, [just like the one Pete Warden used \(https://adafru.it/FtO\)](https://adafru.it/FtO) to [collect all the words in the speech data set \(https://adafru.it/FtP\)](https://adafru.it/FtP)

Cloud Software Setup

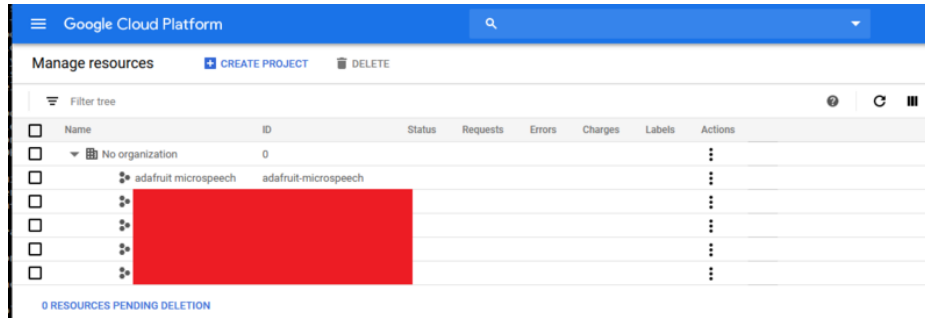
If you don't already have a google cloud account, visit <https://cloud.google.com/> (<https://adafru.it/FtN>) to make an account and sign up for the free trial - you will not end up needing to pay for the amount of storage/compute this project requires.



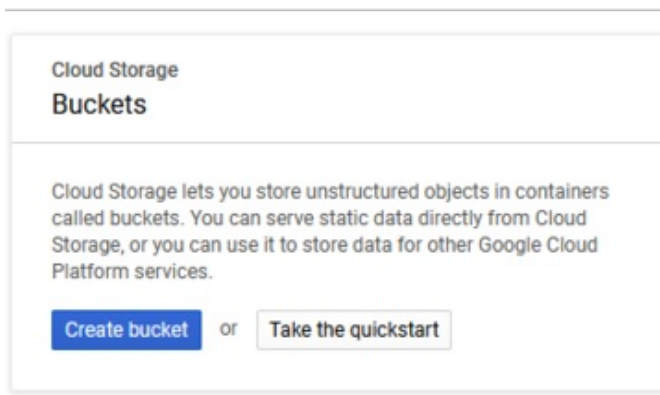
Under GCP (Google Cloud Platform), make a new project



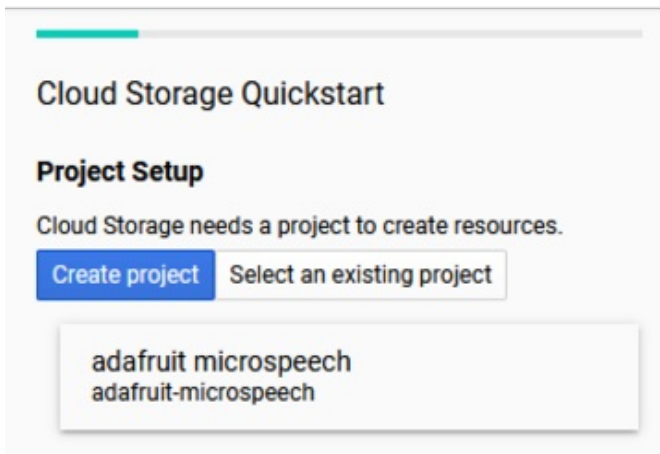
Check the project is made in your project list!



Next up, create a new **GCP Cloud Storage bucket** to store all the audio files! Select the existing project you've made



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Pick a bucket name, we used the project name with -
output at the end

✓ **Name your bucket**

Pick a globally unique, permanent name. [Naming guidelines](#)

adafruit-microspeech-output

Tip: Don't include any sensitive information

CONTINUE

For ACL, we set bucket-level access control

• **Choose how to control access to objects**

Access control model

Set permissions uniformly at bucket-level (Bucket Policy Only)
Enforces the bucket's IAM policy without object ACLs. May help prevent unintended access. If selected, this option becomes permanent after 90 days. [Learn more](#)

Set object-level and bucket-level permissions
Enforces the IAM policy and object ACLs for more granular control of object access.

CONTINUE

Finally make it Multi-regional (default)

• **Choose a default storage class**

Objects added to the bucket are assigned the selected storage class by default. Choose based on where and how often your objects will be accessed. [Learn more](#)

Multi-Regional
Best for data accessed frequently in multiple regions

Regional
Best for data accessed frequently in a single region

Nearline
Best for backups and data accessed once a month or less

Coldline
Best for disaster recovery and data accessed once a year or less

Location

us (multiple regions in United States) ▼

CONTINUE

Finally, your bucket exists, and we can keep going

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[Objects](#) [Overview](#) [Permissions](#) [Bucket Lock](#)

[Upload files](#) [Upload folder](#) [Create folder](#) [Manage holds](#) [Delete](#)

[Buckets](#) / [adafruit-microspeech-output](#)

There are no live objects in this bucket. If you have object versioning enabled, this bucket may contain archived versions of objects, which aren't visible in the console. You can list archived object versions using [gsutil](#) or [the APIs](#).

Speech Recorder Setup

Install Google Cloud SDK

Download the [Google Cloud SDK](https://adafru.it/BiC), and install it. (<https://adafru.it/BiC>)

Open up a terminal and run `gcloud init`

```

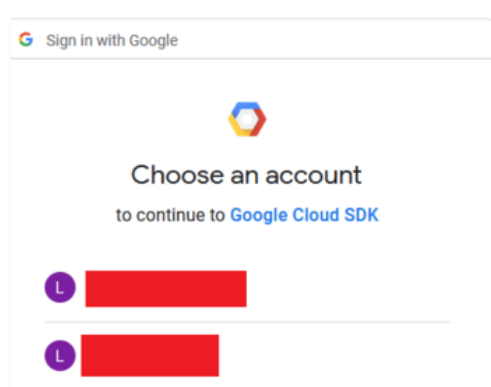
C:\WINDOWS\SYSTEM32\cmd.exe - gcloud init
Welcome to the Google Cloud SDK! Run "gcloud -h" to get the list of available commands.
---
Welcome! This command will take you through the configuration of gcloud.

Your current configuration has been set to: [default]

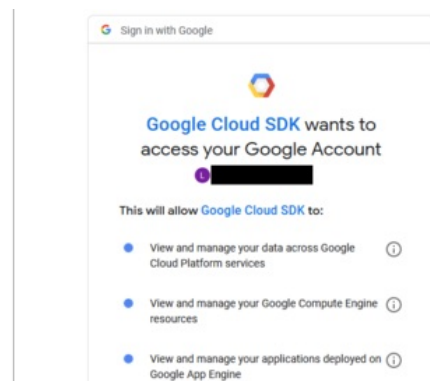
You can skip diagnostics next time by using the following flag:
  gcloud init --skip-diagnostics

Network diagnostic detects and fixes local network connection issues.
Checking network connection...done.
Reachability Check passed.
Network diagnostic passed (1/1 checks passed).

You must log in to continue. Would you like to log in (Y/n)?
  
```



Log into the browser window that pops up



And grant permissions

After you're authenticated, the SDK will ask you to pick the project you want to work on

```

Pick cloud project to use:
[1] adafruit-microspeech
[2] [REDACTED]
[3] [REDACTED]
[4] [REDACTED]
[5] [REDACTED]
[6] Create a new project
Please enter numeric choice or text value (must exactly match list item):
  
```

You'll next be asked to pick a region, for this kinda project it doesn't matter where you pick so go with whatever is close to you.

```
Please enter numeric choice or text value (must exactly match list item): 1

Your current project has been set to: [adafruit-microspeech].

Not setting default zone/region (this feature makes it easier to use [gcloud compute] by setting an appropriate default value for the --zone and --region flag).
See https://cloud.google.com/compute/docs/gcloud-compute section on how to set default compute region and zone manually. If you would like [gcloud init] to be able to do this for you the next time you run it, make sure the Compute Engine API is enabled for your project on the https://console.developers.google.com/apis page.
```

Finally, you're configured!

```
Created a default .boto configuration file at [C:\Users\ladyada\.boto]. See this file and [https://cloud.google.com/storage/docs/gsutil/commands/config] for more information about configuring Google Cloud Storage.
Your Google Cloud SDK is configured and ready to use!

* Commands that require authentication will use ladyada@gmail.com by default
* Commands will reference project `adafruit-microspeech` by default
Run `gcloud help config` to learn how to change individual settings

This gcloud configuration is called [default]. You can create additional configurations if you work with multiple accounts and/or projects.
Run `gcloud topic configurations` to learn more.

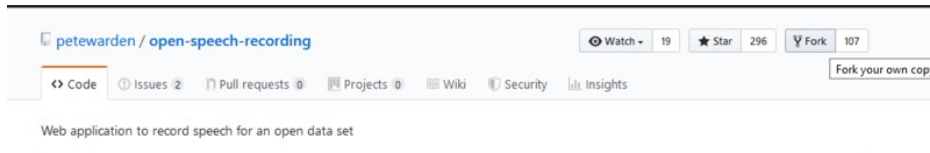
Some things to try next:

* Run `gcloud --help` to see the Cloud Platform services you can interact with. And run `gcloud help COMMAND` to get help on any gcloud command.
* Run `gcloud topic --help` to learn about advanced features of the SDK like arg files and output formatting

C:\Users\ladyada\AppData\Local\Google\Cloud SDK>
```

Configure Software

Fork/clone the <https://github.com/petewarden/open-speech-recording/> (<https://adafru.it/FtQ>) repository to your local computer, and go to that directory in your terminal



Edit your local copy of **app.yaml** in the repo, change the cloud storage bucket to match the name you made earlier. For session secret key generate a random hex string. It's used to authenticate the session, and has nothing to do with the bucket authentication.

```
app.yaml
runtime: python27
api_version: 1
threadsafe: true

# [START handlers]
handlers:
- url: /static
  static_dir: static
  secure: always
- url: /*
  script: main.app
  secure: always
# [END handlers]

# [START env]
env_variables:
  CLOUD_STORAGE_BUCKET: adafruit-microspeech-output
  SESSION_SECRET_KEY: 1dc60a5ab5b68547968923b8518b93c9
# [END env]
```


Edit `static/scripts/app.js` and find the `wantedWords` and `fillerWords` arrays and change them to whatever words you want to prompt for

```
app.js

    canvasCtx.lineTo(canvas.width, canvas.height/2);
    canvasCtx.stroke();
  }
}

var wantedWords = [
  'Adafruit',
  'Digikey',
];

var fillerWords = [
];

function getRecordedWords() {
  var wordElements = document.querySelectorAll('.clip-label');
  var wordCounts = {};
  wordElements.forEach(function(wordElement) {
    var word = wordElement.innerText;
    if (!wordCounts.hasOwnProperty(word)) {
      wordCounts[word] = 0;
    }
  });
}
```

Finally, run `pip install -t lib -r requirements.txt`

```
C:\Users\ladyada\Desktop\open-speech-recording>pip2 install -t lib -r requirements.txt
Collecting Flask==0.12.1 (from -r requirements.txt (line 1))
  Downloading https://files.pythonhosted.org/packages/f4/43/fb2d5fb1d1e1d0402dd57836cf9a78b7f69c8b5f76a04b6e6113d0d7c5a
/Flask-0.12.1-py2.py3-none-any.whl (82kB)
  100% |#####| 92kB 1.8MB/s
Collecting google-cloud-storage==0.22.0 (from -r requirements.txt (line 2))
  Downloading https://files.pythonhosted.org/packages/d8/7b/7640f646d3bc116d57a452c9ec794f61de1ca58b26de67298e062fc908
/google_cloud_storage-0.22.0-py2.py3-none-any.whl (64kB)
  100% |#####| 71kB 1.6MB/s
Collecting itsdangerous>=0.21 (from Flask==0.12.1->-r requirements.txt (line 1))
  Downloading https://files.pythonhosted.org/packages/76/ae/44b03b253d6fade317f32c24d100b3b35c2239807046a4c953c7b89fa49e
/itsdangerous-1.1.0-py2.py3-none-any.whl
Collecting click>=2.0 (from Flask==0.12.1->-r requirements.txt (line 1))
```

Local Deploy & Test

Before you upload up to GCP you can run the project locally! Run `dev_appserver.py` from within the project folder

Due to my kinda messed up Python2/3 setup, I had to manually run `dev_appserver.py` but either way, install the components

```
ladyada@ladyada301-PC: ~/Desktop/open-speech-recording
$ python2 -AppData/Local/Google/Cloud SDK/google-cloud-sdk/bin/dev_appserver.py
This action requires the installation of components: [app-engine-python, cloud-datastore-emulator]

Your current Cloud SDK version is: 256.0.0
Installing components from version: 256.0.0

These components will be installed.


| Name                         | Version | Size     |
|------------------------------|---------|----------|
| Cloud Datastore Emulator     | 2.1.0   | 18.4 MiB |
| gcloud app Python Extensions | 1.9.86  | 6.0 MiB  |

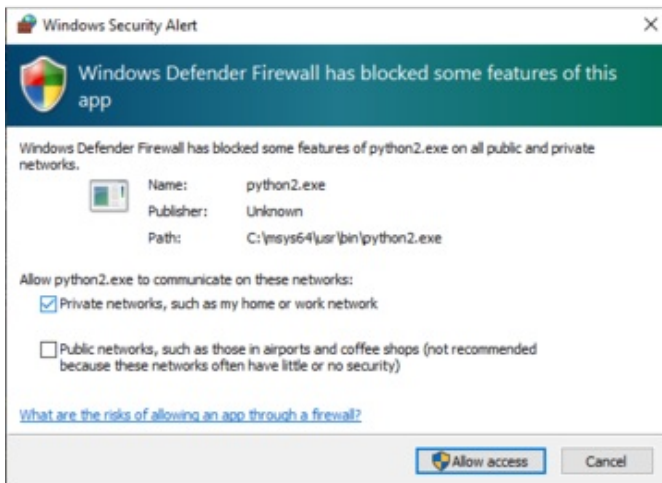

For the latest full release notes, please visit:
https://cloud.google.com/sdk/release_notes
Do you want to continue (Y/n)?
```

```
Creating update staging area

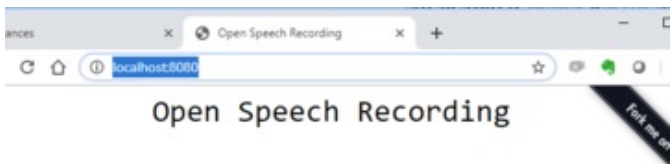
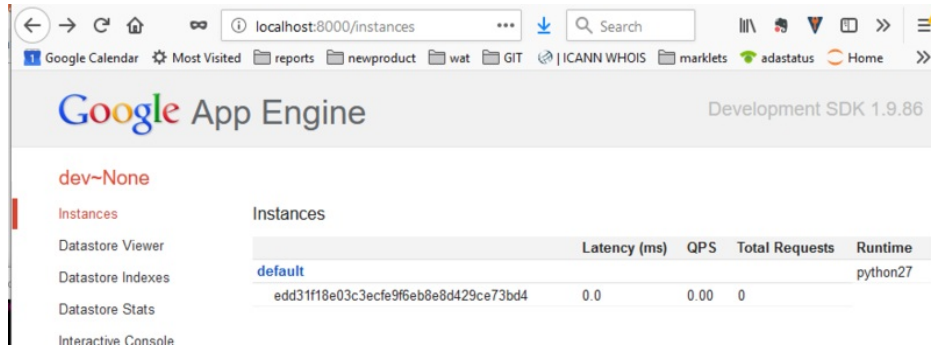
Installing: Cloud Datastore Emulator
Installing: gcloud app Python Extensions
Creating backup and activating new installation

Performing post processing steps...done.
Update done!
Restarting command:
$ dev_appserver.py
```

Install the extensions as prompted, and if necessary, rerun the appserver script, and permit Python2 access to the network



Open up a browser and visit <http://localhost:8080/> to see the server setup, you should have an instance running



Click on **default** to load the website...it should look like this!

Deploy & Test

From the directory, in terminal, run `gcloud app deploy`. The first time you run it you'll be asked to setup the region

```
C:\Users\ladyada\Desktop\open-speech-recording>gcloud app deploy
You are creating an app for project [adafruit-microspeech].
WARNING: Creating an App Engine application for a project is irreversible and the region
cannot be changed. More information about regions is at
<https://cloud.google.com/appengine/docs/locations>.

Please choose the region where you want your App Engine application
located:

[1] asia-east2      (supports standard and flexible)
[2] asia-northeast1 (supports standard and flexible)
[3] asia-northeast2 (supports standard and flexible)
[4] asia-south1     (supports standard and flexible)
[5] australia-southeast1 (supports standard and flexible)
[6] europe-west     (supports standard and flexible)
[7] europe-west2    (supports standard and flexible)
[8] europe-west3    (supports standard and flexible)
[9] europe-west6    (supports standard and flexible)
[10] northamerica-northeast1 (supports standard and flexible)
[11] southamerica-east1 (supports standard and flexible)
[12] us-central     (supports standard and flexible)
[13] us-east1       (supports standard and flexible)
[14] us-east4       (supports standard and flexible)
[15] us-west2       (supports standard and flexible)
[16] cancel
Please enter your numeric choice: 13
```

Select your local region

```
Please enter your numeric choice: 13
Creating App Engine application in project [adafruit-microspeech] and region [us-east1]....|
```

Type Y to continue the deployment!

```
Creating App Engine application in project [adafruit-microspeech] and region [us-east1]...done.
Services to deploy:

descriptor:      [C:\Users\ladyada\Desktop\open-speech-recording\app.yaml]
source:          [C:\Users\ladyada\Desktop\open-speech-recording]
target project:  [adafruit-microspeech]
target service:  [default]
target version:  [20190804t135635]
target url:      [https://adafruit-microspeech.appspot.com]

Do you want to continue (Y/n)? Y

Beginning deployment of service [default]...

= Uploading 13 files to Google Cloud Storage =

File upload done.
Updating service [default]...done.
Setting traffic split for service [default]...done.
Deployed service [default] to [https://adafruit-microspeech.appspot.com]

You can stream logs from the command line by running:
  $ gcloud app logs tail -s default

To view your application in the web browser run:
  $ gcloud app browse
```

Finally, visit the URL in question or just type `gcloud app browse`

```
C:\Users\ladyada\Desktop\open-speech-recording>gcloud app browse
Opening [https://adafruit-microspeech.appspot.com] in a new tab in your default browser.
```



The site is now live!

Check Recordings

After you use the open recording app, visit the output bucket you made, you should see many `ogg` files one for each utterance

adafruit-microspeech-output

Objects Overview Permissions Bucket Lock

Upload files Upload folder Create folder Manage holds Delete

Filter by prefix...

Buckets / adafruit-microspeech-output

<input type="checkbox"/>	Name	Size	Type	Storage class	Last modified	Public access	Encryption	Retention expiration date	Hold
<input checked="" type="checkbox"/>	Adafruit_0d4ef11e56754176ad9f2f1445882c3...	9.71 KB	audio/ogg	Multi-Regional	8/5/19, 8:38:26 PM UTC-4	Not public	Google-managed key	-	None
<input checked="" type="checkbox"/>	Adafruit_0d4ef11e56754176ad9f2f1445882c3...	9.73 KB	audio/ogg	Multi-Regional	8/5/19, 8:38:29 PM UTC-4	Not public	Google-managed key	-	None
<input checked="" type="checkbox"/>	Adafruit_0d4ef11e56754176ad9f2f1445882c3...	9.72 KB	audio/ogg	Multi-Regional	8/5/19, 8:38:28 PM UTC-4	Not public	Google-managed key	-	None
<input checked="" type="checkbox"/>	Adafruit_0d4ef11e56754176ad9f2f1445882c3...	9.71 KB	audio/ogg	Multi-Regional	8/5/19, 8:38:30 PM UTC-4	Not public	Google-managed key	-	None
<input checked="" type="checkbox"/>	Adafruit_0d4ef11e56754176ad9f2f1445882c3...	9.72 KB	audio/ogg	Multi-Regional	8/5/19, 8:38:29 PM UTC-4	Not public	Google-managed key	-	None
<input checked="" type="checkbox"/>	Adafruit_354c53ac534d4ca843b59658c0e1e...	9.7 KB	audio/ogg	Multi-Regional	8/5/19, 7:55:43 PM UTC-4	Not public	Google-managed key	-	None

