

This is your **last** free member-only story this month. [Sign up for Medium and get an extra one](#)

Creating a MongoDB Cluster and inserting a document with Python



Garrett Sweeney

Follow



Aug 19, 2019 · 3 min read ★

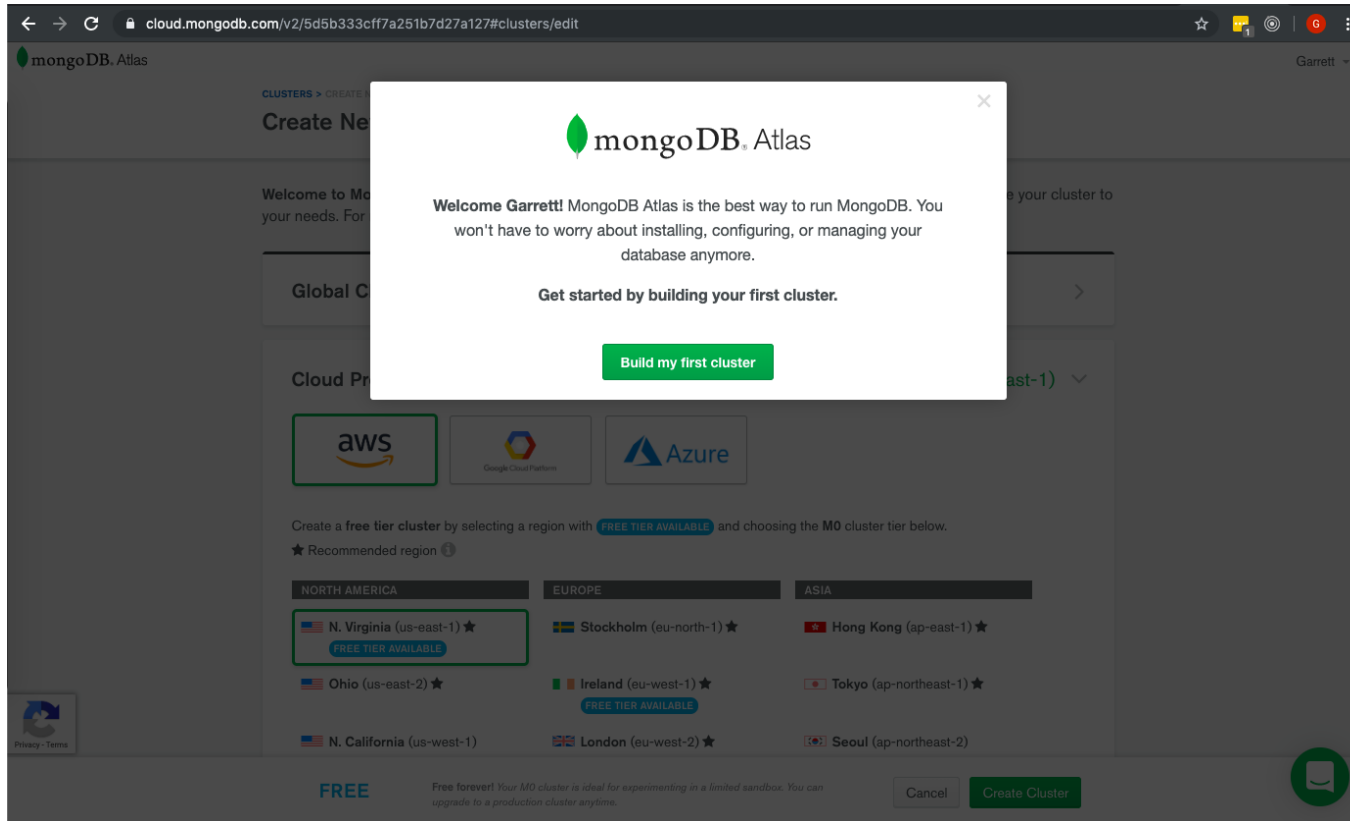
There are many guides [on how to create a cluster](#) and [use python to insert into the cluster](#), but here's by experience creating my first MongoDB cluster.

Below you'll find "Part1: Cluster Creation" and "Part 2: Inserting a Document with Python".

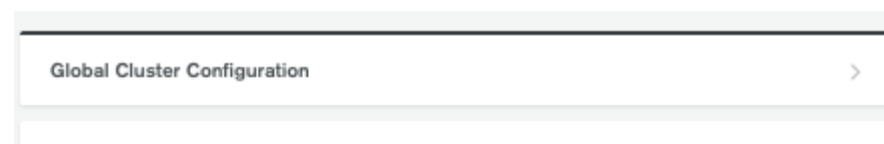
Part 1: Cluster Creation

1. Go to <https://cloud.mongodb.com> and create an account.




2. Upon creating an account, you may see a screen like this. Select “Build my first cluster”



3. The default settings for creating a cluster in AWS should work. Just scroll down and type in a name for your cluster.




















Cloud Provider & Region AWS, N. Virginia (us-east-1) ▾



Create a **free tier cluster** by selecting a region with **FREE TIER AVAILABLE** and choosing the **M0** cluster tier below.

★ Recommended region ⓘ

NORTH AMERICA	EUROPE	ASIA
 N. Virginia (us-east-1) ★ FREE TIER AVAILABLE	 Stockholm (eu-north-1) ★	 Hong Kong (ap-east-1) ★
 Ohio (us-east-2) ★	 Ireland (eu-west-1) ★ FREE TIER AVAILABLE	 Tokyo (ap-northeast-1) ★
 N. California (us-west-1)	 London (eu-west-2) ★	 Seoul (ap-northeast-2)
 Oregon (us-west-2) ★ FREE TIER AVAILABLE	 Paris (eu-west-3) ★	 Singapore (ap-southeast-1) ★ FREE TIER AVAILABLE
 Montreal (ca-central-1)	 Frankfurt (eu-central-1) ★ FREE TIER AVAILABLE	 Mumbai (ap-south-1) FREE TIER AVAILABLE
	SOUTH AMERICA	AUSTRALIA
	 Sao Paulo (sa-east-1)	 Sydney (ap-southeast-2) ★

Select **Multi-Region**, **Workload Isolation**, and **Replication Options (M10+ clusters)** ☐ NO
Increase region availability, configure tagged analytics nodes, and optimize for local service areas. [Read more](#)

Cluster Tier M0 Sandbox (Shared RAM, 512 MB Storage) >
Encrypted

Additional Settings MongoDB 4.0, No Backup >

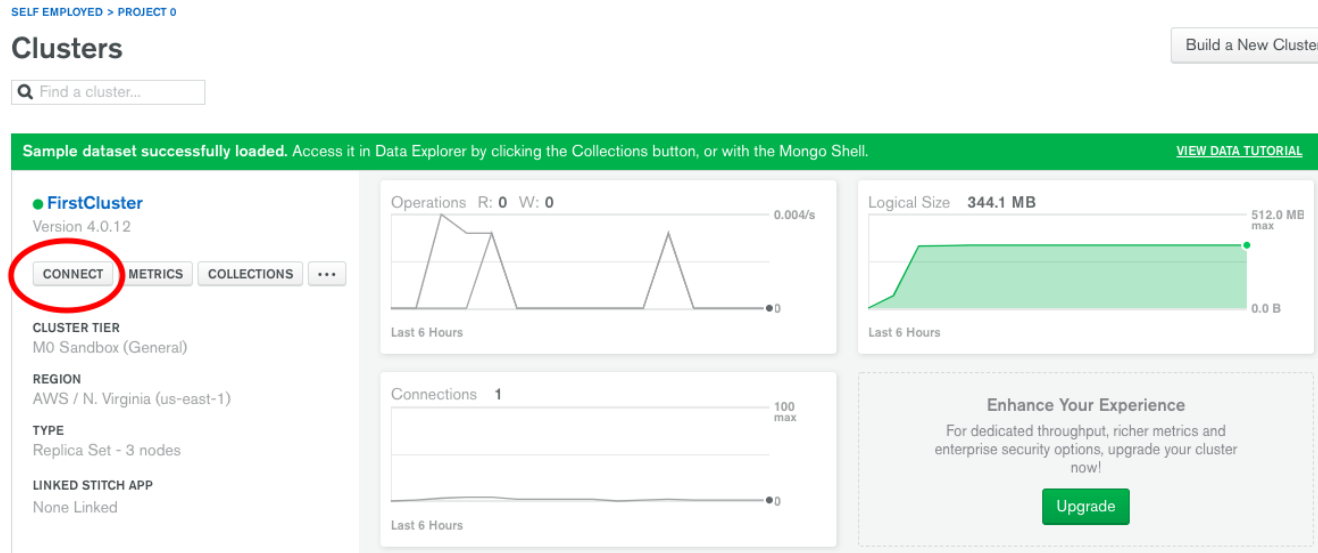
Cluster Name FirstCluster ▾

One time only: once your cluster is created, you won't be able to change its name.

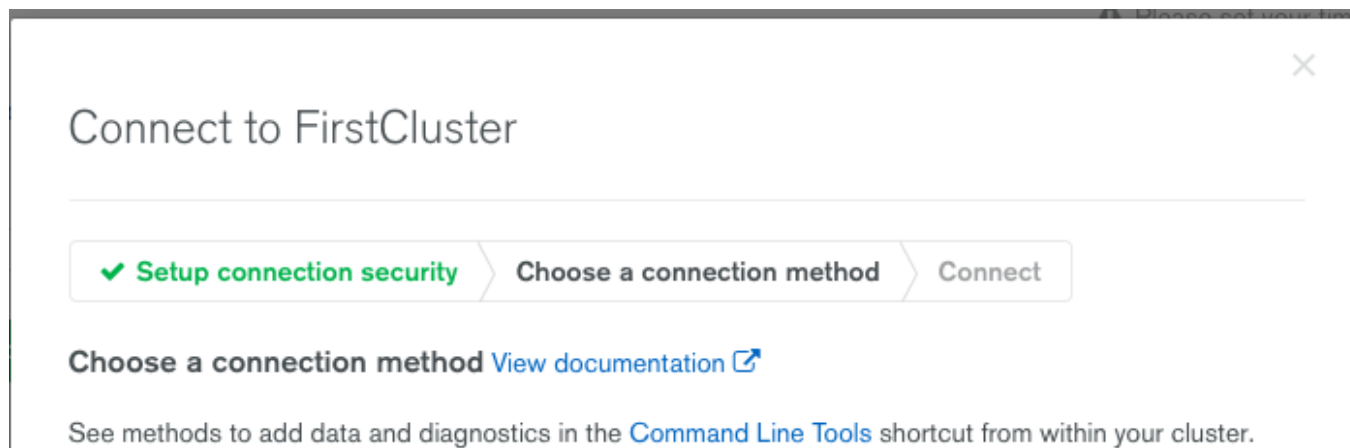
Cluster names can only contain ASCII letters, numbers, and hyphens.

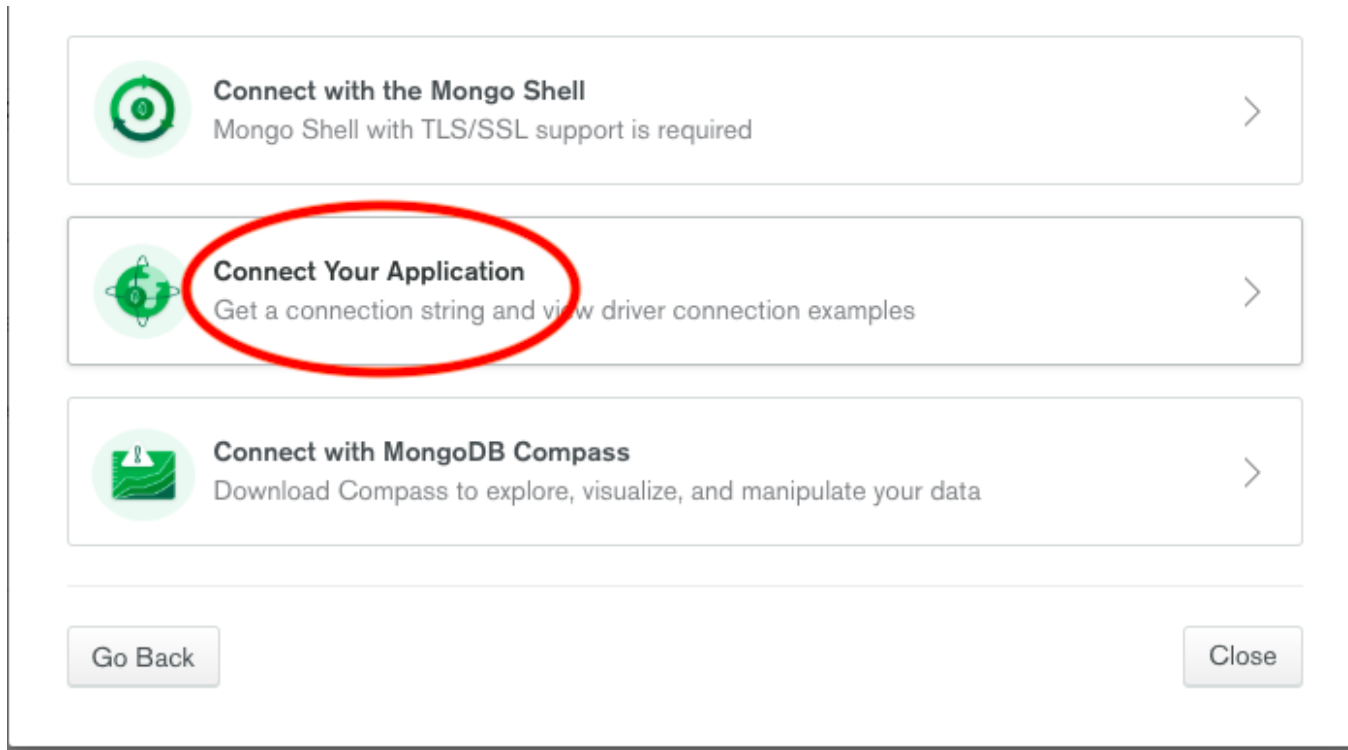
I named my cluster “FirstCluster”

4. After the cluster is created, you'll be able to see it in the console. Go ahead and click "Connection"

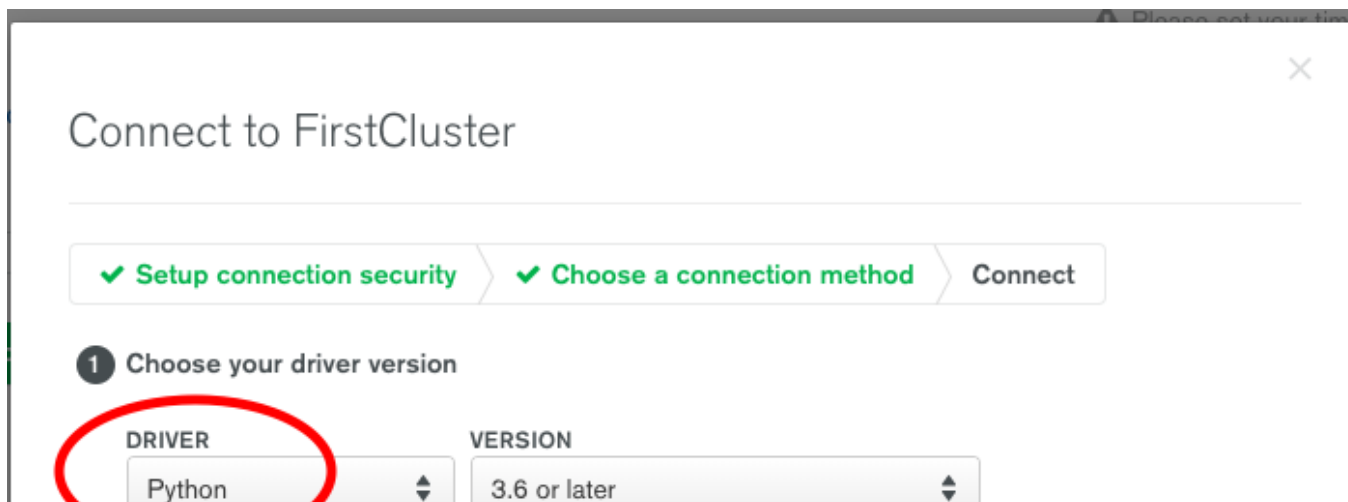


5. When prompted for connection method, click "Connect Your Application"





6. Select Python as the driver and take note of the Full Driver example.



2 Add your connection string into your application code

Connection String Only **Full Driver Example**

```
client = pymongo.MongoClient("mongodb+srv://gsweene2:<password>@f.  
db = client.test
```

Replace **<password>** with the password for the **gsweene2** user.
When entering your password, make sure that any special characters are **URL encoded**.

Having trouble connecting? [View our troubleshooting documentation](#)

[Go Back](#) [Close](#)

7. Now lets head back to the console and define a new Collections

Sample dataset successfully loaded. Access it in Data Explorer by clicking the Collections button, or with the Mongo Shell. [VIEW DATA TUTORIAL](#)

FirstCluster
Version 4.0.12

[CONNECT](#) [METRICS](#) [COLLECTIONS](#) [...](#)

CLUSTER TIER
M0 Sandbox (General)

REGION
AWS / N. Virginia (us-east-1)

TYPE
Replica Set - 3 nodes

LINKED STITCH APP
None Linked

Operations R: 0 W: 0 0.003/s
Last 6 Hours

Logical Size 344.1 MB
512.0 MB max
0.0 B
Last 6 Hours

Connections 1
100 max

Enhance Your Experience
For dedicated throughput, richer metrics and enterprise security options, upgrade your cluster now!
[Upgrade](#)

8. You'll see that I imported the sample data below, but we want to create a new database.

SELF EMPLOYED > PROJECT 0 > CLUSTERS

FirstCluster

VERSION: 4.0.12 REGION: N. Virginia (us-east-1)

Overview Real Time Metrics **Collections** Command Line Tools

DATABASES: 8 COLLECTIONS: 21 [REFRESH](#)

[+ Create Database](#)

Q NAMESPACES

- ▶ salary_data
- ▶ **sample_airbnb**
- ▶ sample_geospatial
- ▶ sample_mflix
- ▶ sample_supplies
- ▶ sample_training
- ▶ sample_weatherdata
- ▶ test

sample_airbnb

DATABASE SIZE: 89.99MB INDEX SIZE: 464KB TOTAL COLLECTIONS: 2 [CREATE COLLECTION](#)

Collection Name	Documents	Documents Size	Documents Avg	Indexes	Index Size	Index Avg
a	1	33B	33B	1	16KB	16KB
listingsAndReviews	5555	89.99MB	16.59KB	4	448KB	112KB

Click "Create Database"

9. Name your Database and Collection



Create Database

DATABASE NAME ?

COLLECTION NAME ?

☐ **Capped Collection**
Before MongoDB can save your new database, a collection name must be specified at the time of creation.

10. After the DB is created, you should see it in the console

SELF EMPLOYED > PROJECT 0 > CLUSTERS

FirstCluster VERSION 4.0.12 REGION N. Virginia (us-east-1)

Overview Real Time Metrics **Collections** Command Line Tools

DATABASES: 9 COLLECTIONS: 22 REFRESH

+ Create Database

Q NAMESPACES

- SampleDatabase
 - SampleCollection**
 - salary_data

SampleDatabase.SampleCollection
COLLECTION SIZE: 0B TOTAL DOCUMENTS: 0 INDEXES TOTAL SIZE: 4KB

Find Indexes Aggregation

INSERT DOCUMENT

FILTER {"filter": "example"} Find Reset

Part 2: Inserting a Document with Python

1. Head over to your workspace and create a new folder

```
cd ~/git  
mkdir mongo-python-example  
cd mongo-python-example
```

2. Create a `requirements.txt` file and a `mongo_util.py` file

```
touch requirements.txt  
touch mongo_util.py
```

3. Populate your `mongo_util.py` file with the following, and replace `<PASSWORD>` with your mongo user password.

```
# import datetime module  
  
import datetime  
  
# import pymongo module  
  
import pymongo
```

```
# connection string

client = pymongo.MongoClient("mongodb+srv://gsweene2:
<PASSWORD>@firstcluster-objqd.mongodb.net/test?
retryWrites=true&w=majority")

# test

db = client['SampleDatabase']

# define collection

collection = db['SampleCollection']

# sample data

document = {"company": "Capital One",

"city": "McLean",

"state": "VA",

"country": "US"}

# insert document into collection

id = collection.insert_one(document).inserted_id

print("id")

print(id)
```

4. Notice we have 2 modules imported above. Add those to your `requirements.txt` file.

```
datetime  
  
dnspython  
  
pymongo
```

5. Next, create a `virtualenv` for our small python script.

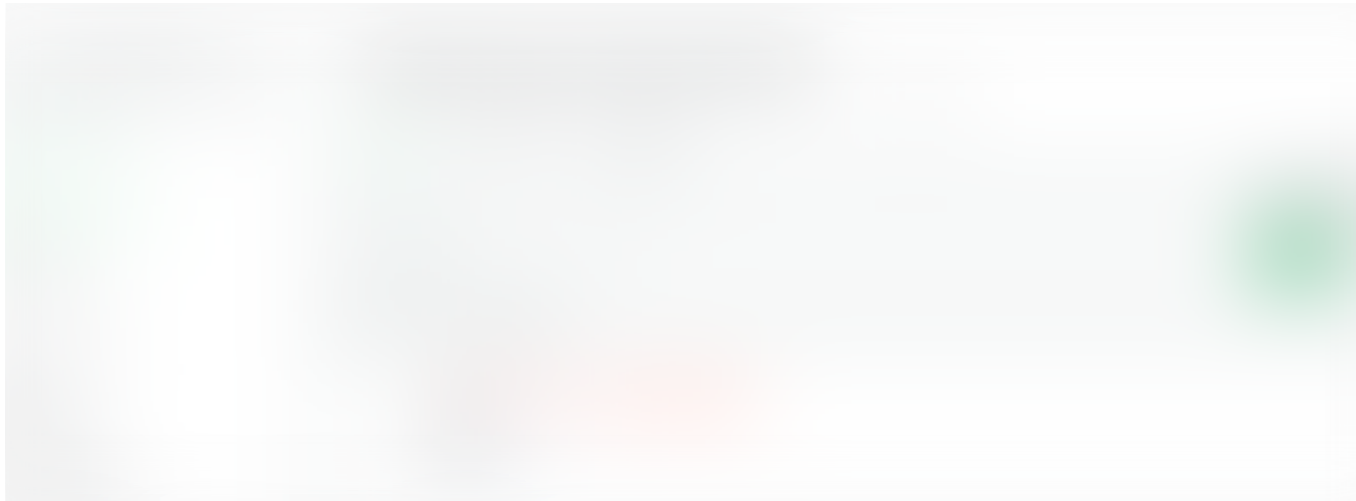
```
# install virtualenv  
  
pip install --user virtualenv  
  
# Create virtualenv in repo  
  
virtualenv .  
  
# Activate Virtualenv  
  
source ./bin/activate  
  
# Install dependencies
```

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

6. Now you should be able to run your code and insert an item! If you note in the last line of our script, we print out the id of the newly created mongo document.

```
$ python mongo_util.py  
  
id  
  
5d5b53c7ad555762b067cb3b
```

You can also see the new document in the console.



Whoop, there it is

What's Next?

In the next post I'll turn this into a Flask API. Then I'll deploy it with terraform to AWS, and use API Gateway to allow us to create documents with our API.

• • •


Code on Github

Sign up for Top 10 Stories

By The Startup

Get smarter at building your thing. Subscribe to receive The Startup's top 10 most read stories — delivered straight into your inbox, twice a month. [Take a look.](#)

Your email

 Get this newsletter

By signing up, you will create a Medium account if you don't already have one. Review our [Privacy Policy](#) for more information about our privacy practices.

Python

Mongodb

Mongodb Atlas

AWS

Learn more.

Medium is an open platform where 170 million readers come to find insightful and dynamic thinking. Here, expert and undiscovered voices alike dive into the heart of any topic and bring new ideas to the surface. [Learn more](#)

Make Medium yours.

Follow the writers, publications, and topics that matter to you, and you'll see them on your homepage and in your inbox. [Explore](#)

Write a story on Medium.

If you have a story to tell, knowledge to share, or a perspective to offer — welcome home. It's easy and free to post your thinking on any topic. [Start a blog](#)



[About](#) [Write](#) [Help](#) [Legal](#)