No SQL Databases: Mongo DB

Universidad de las Fuerzas Armadas ESPE

Object Oriented Programming

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Data bases in the Cloud

- A database in the cloud (DBaaS Data Base as a service) is a service accessed through cloud platforms. It provides the same facilities as a traditional database, but with the flexibility of the Cloud Computing (CC). Among others, its main characteristics are:
  - 1) Access through the cloud
  - 2) the company should not purchase dedicated hardware
  - 3) it can be managed by the user or it can be managed by the service provider
  - 4) it supports relational databases such as MySQL, Postgres, and noSQL such as MongoDB, Apache CouchDB (IBM Cloudant)

Data bases in the Cloud

- Accessed through a web user interface, a GUI, or vendor API.
- Considerations to take into account when talking about databases in the cloud.
- Control options, similar to virtual machine management, it is managed like a traditional database, or it can be managed through your provider.
- Database technology is more scalable in the cloud. DBaaS providers encrypt information or provide means of security.

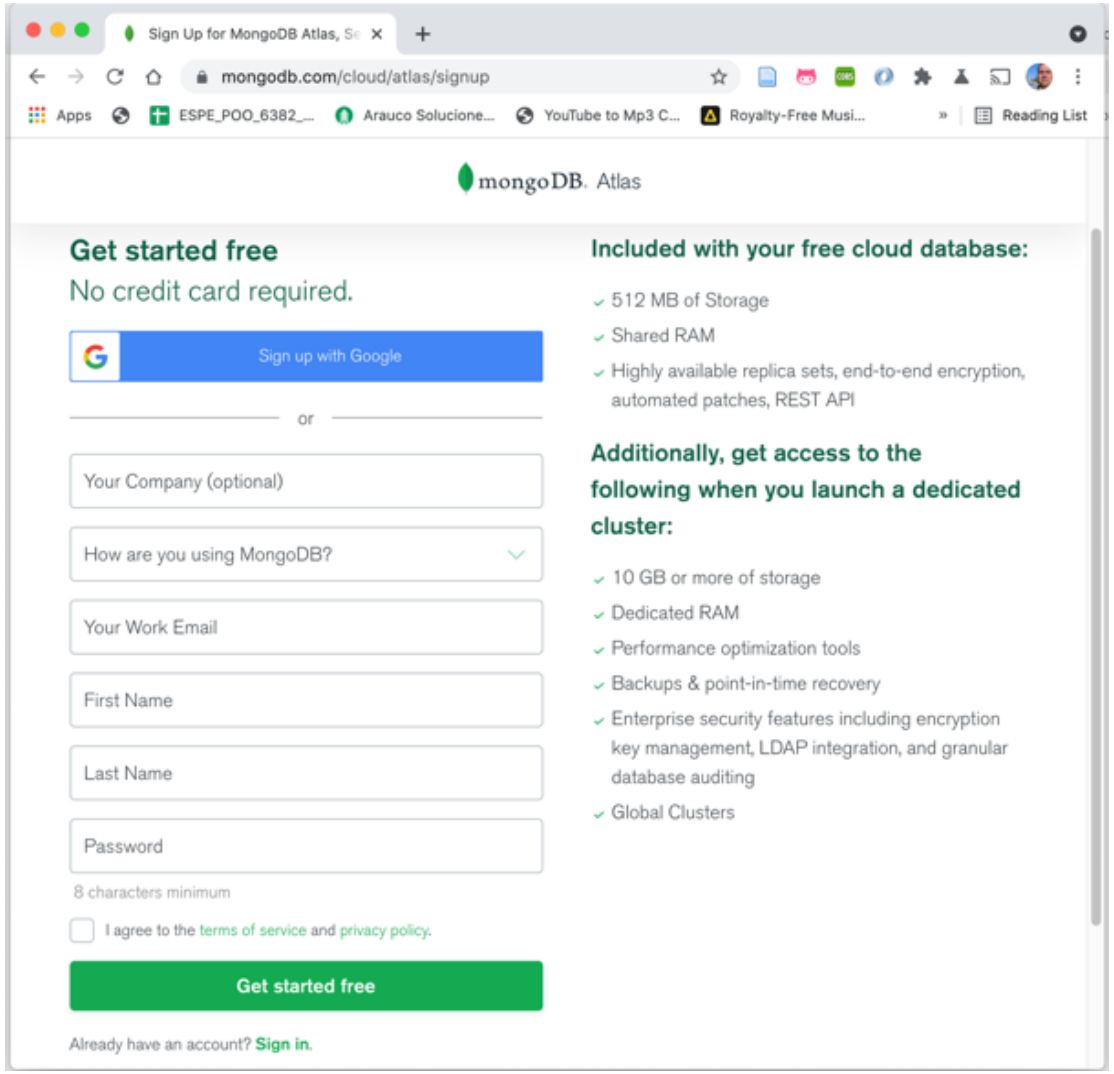
MongoDB … Atlas

- For developers, DBaaS providers offer free services. But they are restricted in access, storage, number of users. Once the service goes into production or goes beyond those limits, the developer follows the pay-as-you-go model, per transaction, per time of use.
- **MongoDB Atlas** offers a free initial service with 512MB of storage, shared RAM, highly available replica, end-to-end encryption, automatic patching, REST API. You register using a Google account (Gmail) or by entering personal data: Company name, company email, first name, last name, password. The service can be provisioned in AWS, Azure, or Google Cloud.
- Following is the process for creating a cluster, database, user, and data in MongoDB Atlas. And the insertion of data (collections) and to retrieve the date. This solution creates a data repository in the MongoDB Atlas service on AWS.

mongoDB. Atlas

MongoDB … Atlas

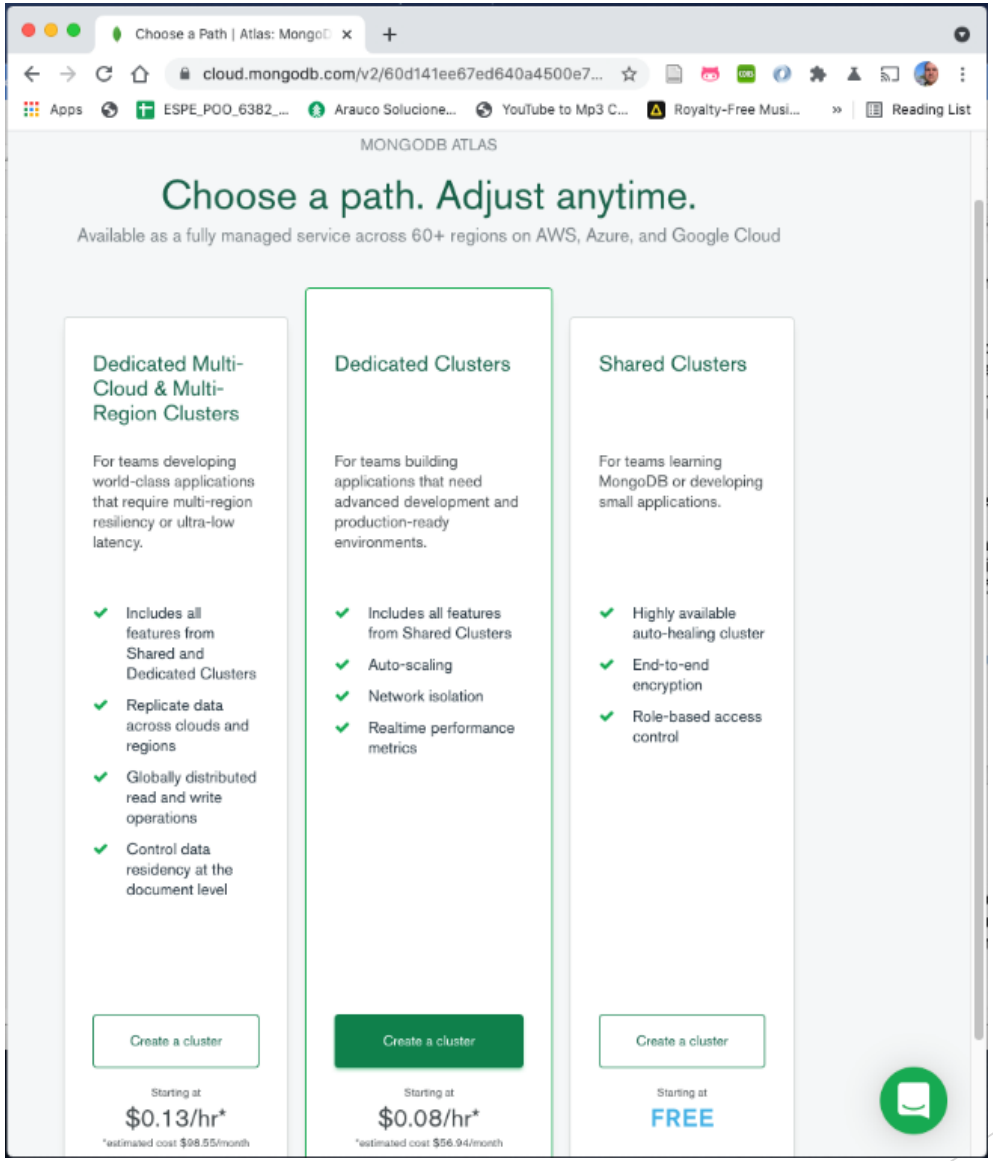
1. Create a user https://www.mongodb.com/cloud/atlas/signup



mongoDB.
Atlas

MongoDB ... Atlas

2. Create un cluster



mongoDB.
Atlas

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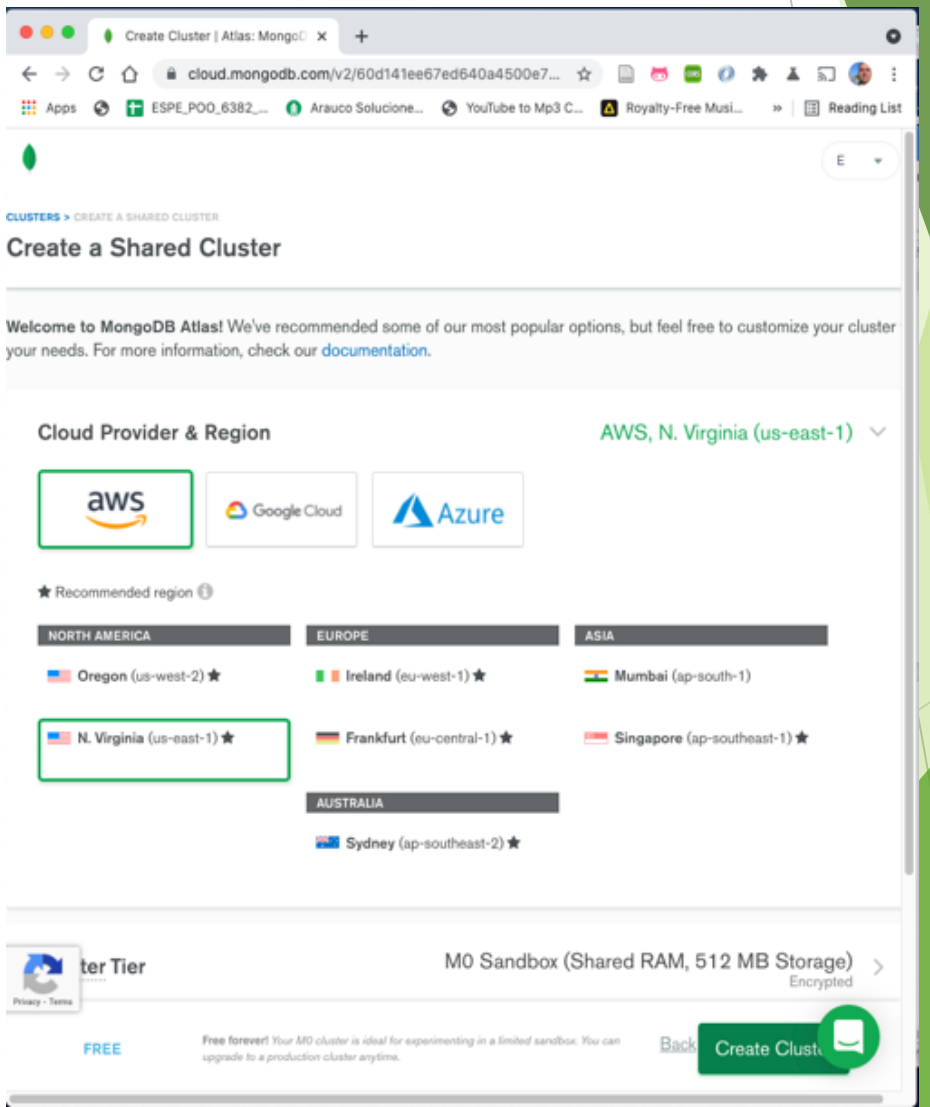
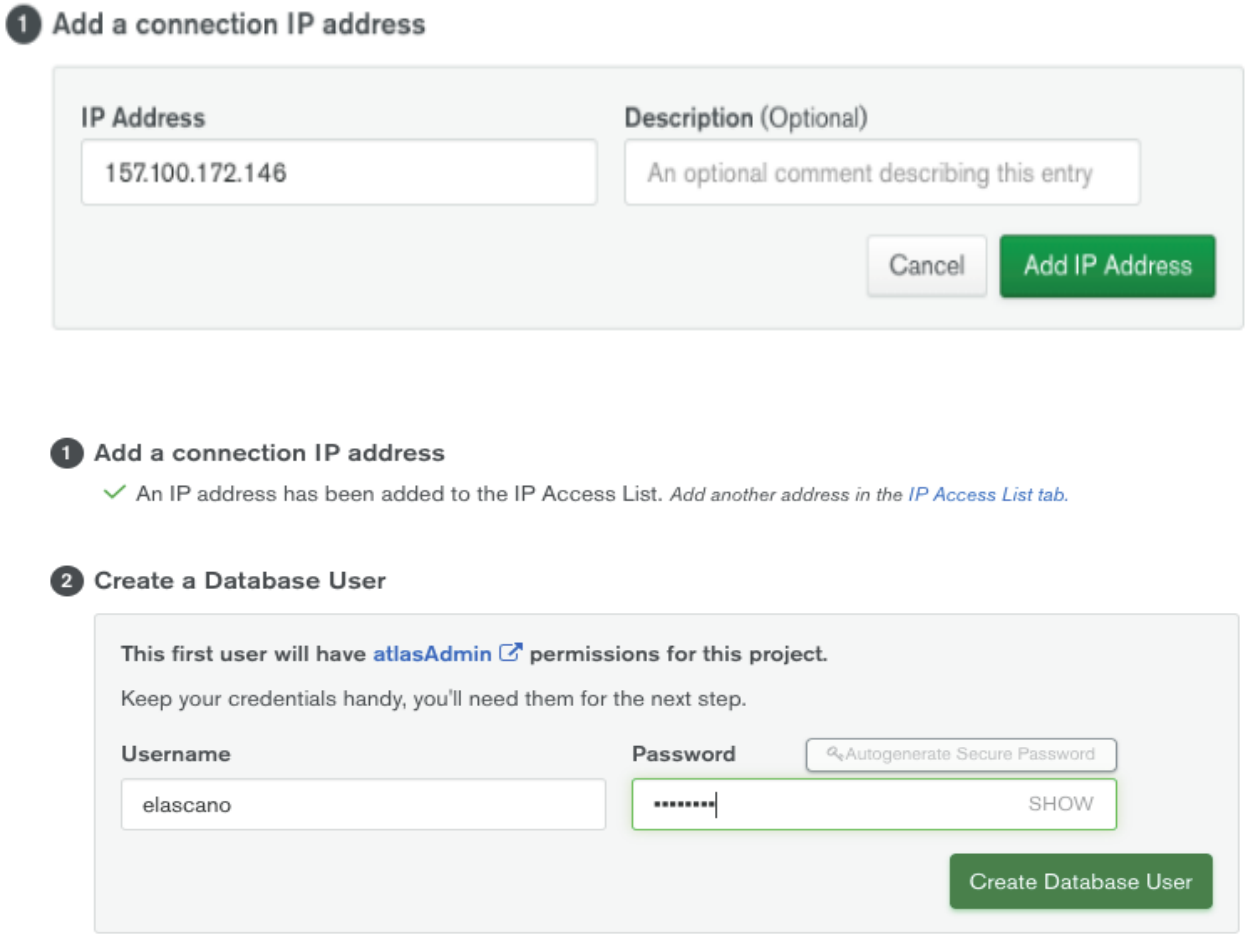
3. Select a service provider (Google / Amazon / Azure),

I prefer Amazon, you can choose what you wish



MongoDB Atlas

4. Setup remote Access and database user



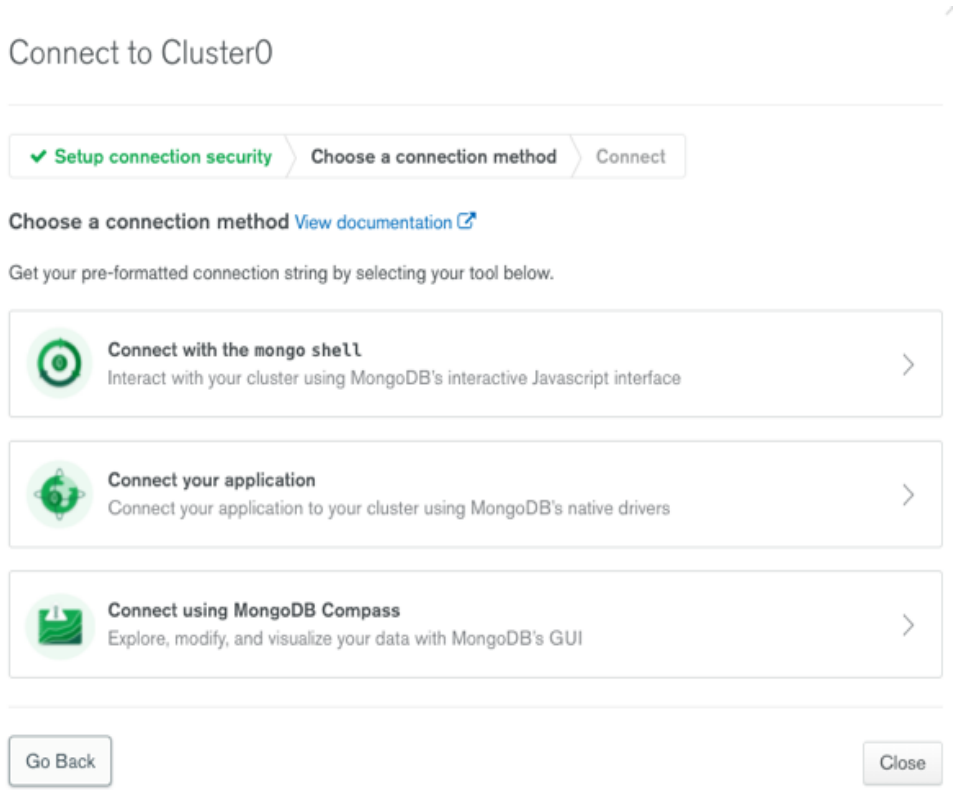
MongoDB Atlas

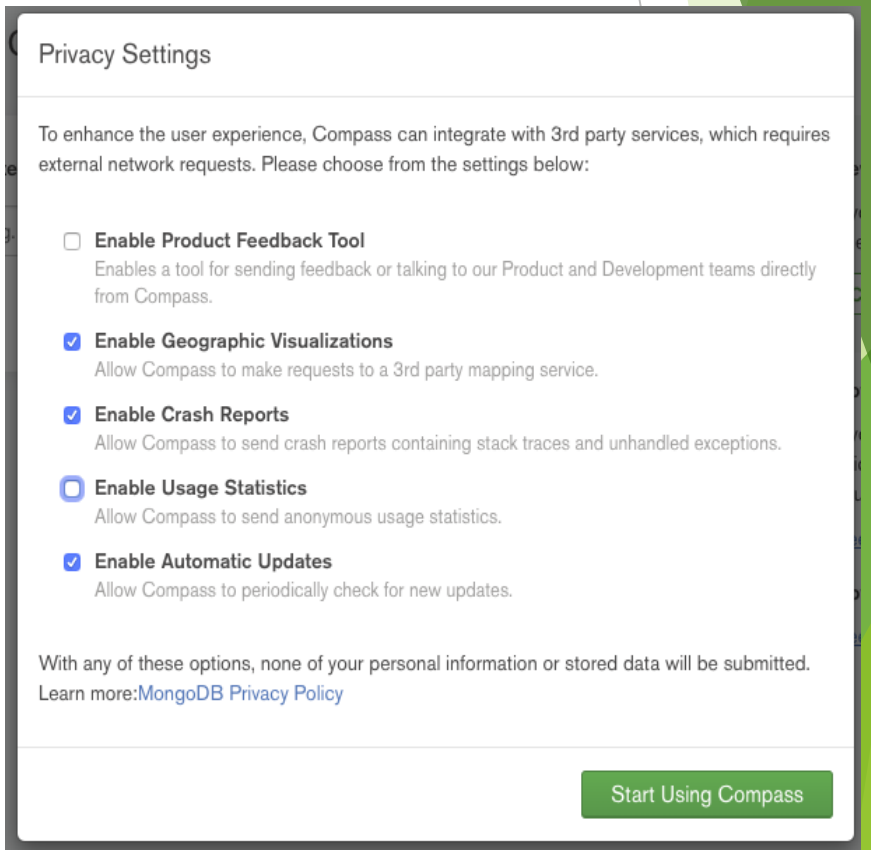
5. Setup connectivity (in these examples, the connection is through mongo Shell (command line) and ComngoDB Compass (GUI client). When you program your system, you must choose “Connect your application”

mongo Shell

Program

MongoDB Compass





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MongoDB Atlas: Mongo Shell

6. Insert and read data using mongo Shell
   - $ mongo <connection_string>
   - >db (list databases of the cluster)
   - >use myFirstDatabase (it connects to myFirstDatabase)
   - > db.myContactsCollection.insertOne ({id: 1, "name": "Maria Isabel", "cellphoneNumber": "0999883737"}); (insert one document to the collection)
   - > db.myContactsCollection.find({"id":1}) (list the documents with critérium id=1.

mongoDB. Atlas

MongoDB Atlas: Mongo Shell

```
Edisons-MacBook-Pro:labsDocExamples edisonlascano$ mongo "mongodb+srv://cluster0.48kp5.mongodb.net/myFirstDatabase" --username elascano
MongoDB shell version v4.2.2
Enter password:
connecting to: mongodb://cluster0-shard-00-00.48kp5.mongodb.net:27017,cluster0-shard-00-01.48kp5.mongodb.net:27017,cluster0-shard-00-02.48kp5.mongodb.net:27017/myFirstDatabase?authSource=admin&compressors=disabled&gssapiServiceName=mongodb&replicaSet=atlas-ej954i-shard-0&ssl=true
2021-06-22T14:43:57.693-0500 I  NETWORK  [js] Starting new replica set monitor for atlas-ej954i-shard-0/cluster0-shard-00-00.48kp5.mongodb.net:27017,cluster0-shard-00-01.48kp5.mongodb.net:27017,cluster0-shard-00-02.48kp5.mongodb.net:27017
2021-06-22T14:43:57.693-0500 I  CONNPOOL [ReplicaSetMonitor-TaskExecutor] Connecting to cluster0-shard-00-01.48kp5.mongodb.net:27017
2021-06-22T14:43:57.693-0500 I  CONNPOOL [ReplicaSetMonitor-TaskExecutor] Connecting to cluster0-shard-00-02.48kp5.mongodb.net:27017
2021-06-22T14:43:57.693-0500 I  CONNPOOL [ReplicaSetMonitor-TaskExecutor] Connecting to cluster0-shard-00-00.48kp5.mongodb.net:27017
2021-06-22T14:43:58.567-0500 I  NETWORK  [ReplicaSetMonitor-TaskExecutor] Confirmed replica set for atlas-ej954i-shard-0 is atlas-ej954i-shard-0/cluster0-shard-00-00.48kp5.mongodb.net:27017,cluster0-shard-00-01.48kp5.mongodb.net:27017,cluster0-shard-00-02.48kp5.mongodb.net:27017
Implicit session: session { "id" : UUID("030325dd-20de-401f-88a1-7bb8c25a581c") }
MongoDB server version: 4.4.6
WARNING: shell and server versions do not match
MongoDB Enterprise atlas-ej954i-shard-0:PRIMARY>
```

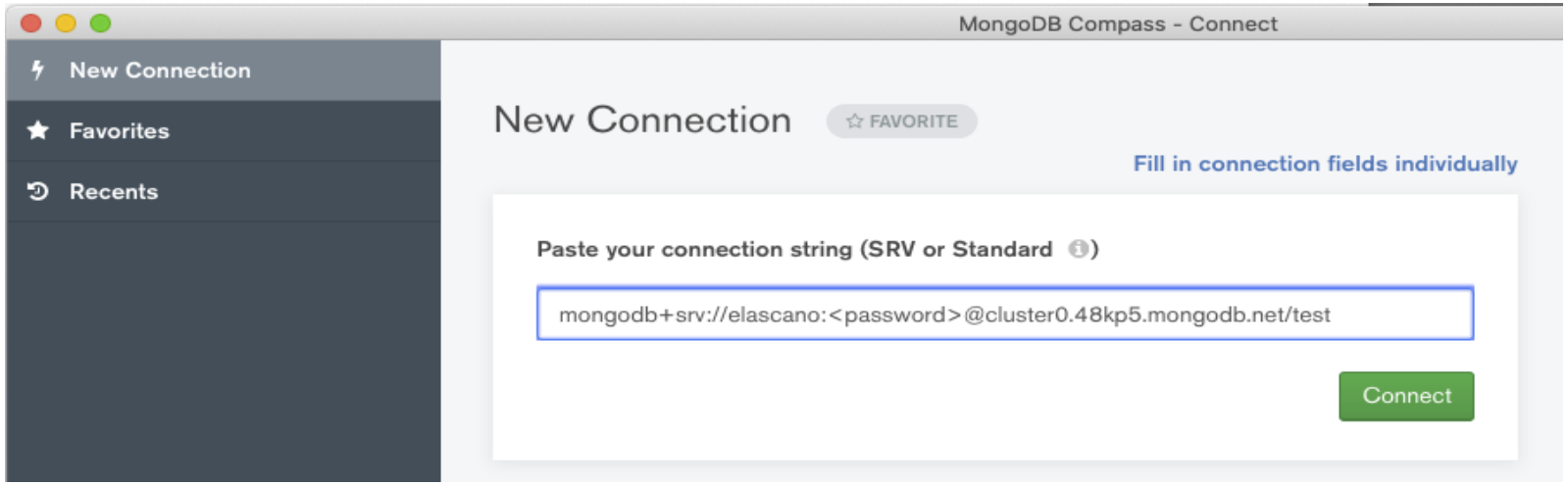
MongoDB Atlas: Mongo Shell

```
MongoDB Enterprise atlas-ej954i-shard-0:PRIMARY> db
myFirstDatabase
MongoDB Enterprise atlas-ej954i-shard-0:PRIMARY> use myFirstDatabase
switched to db myFirstDatabase
MongoDB Enterprise atlas-ej954i-shard-0:PRIMARY> db.myContactsCollection.insertOne( { id: 1, "
name": "Maria Isabel", "cellphoneNumber": "0999883737" } );
{
        "acknowledged" : true,
        "insertedId" : ObjectId("60d23f4f5f22639c266f5395")
}
MongoDB Enterprise atlas-ej954i-shard-0:PRIMARY> db.myContactsCollection.insertOne( { id: 2, "
name": "Jorge Edison", "cellphoneNumber": "0959383637" } );
{
        "acknowledged" : true,
        "insertedId" : ObjectId("60d23f785f22639c266f5396")
}
MongoDB Enterprise atlas-ej954i-shard-0:PRIMARY> db.myContactsCollection.insertOne( { id: 3, "
name": "Alfredo Rene", "cellphoneNumber": "0959383123" } );
{
        "acknowledged" : true,
        "insertedId" : ObjectId("60d23fc45f22639c266f5397")
}
MongoDB Enterprise atlas-ej954i-shard-0:PRIMARY>
```

```
MongoDB Enterprise atlas-ej954i-shard-0:PRIMARY> db.myContactsCollection.find({"id":1})
{ "_id" : ObjectId("60d23f4f5f22639c266f5395"), "id" : 1, "name" : "Maria Isabel", "cellp
honeNumber" : "0999883737" }
MongoDB Enterprise atlas-ej954i-shard-0:PRIMARY> db.myContactsCollection.find({"id":1})
```

MongoDB Atlas: MongoDB Compass

6. Connect using MongoDB Compass



mongoDB. Atlas

MongoDB Atlas: MongoDB Compass

7. Using MongoDB collections with MongoDB Compass to rad the documents