

MongoDB installation

Contents

- Installation videos
- MongoDB atlas account creation
- Connecting to MongoDB from compass
- Connecting to MongoDB from your notebook
- FAQs (some common installation issues)

Note

You only want this in week 4. But I'm just putting it here ahead of time in case you want to start early.

The good news is that you don't have to install anything on your computer. We will be using MongoDB Atlas, which is a cloud-based database service. You can create a free account and use it for the class.

Probably one of the motivations why cloud computing is so popular is that there won't be any installation pains. You no longer want to deal with any issues that can arise that are more specific to your own computer or wrong setup.

We will learn about the science behind cloud computing and many more in DSCI 525. Let's get to the installation.

Installation videos

If you are a person who can sometimes go wrong with the installation because you are very new to the IT world and software installations, then watching the following videos in order is the best option, as you can go with me step by step and do the installation.

Or, if you are a person who is very comfortable with installations, then you can just go through the written instructions in the following sections.

- MongoDB Atlas account creation
- Connecting to MongoDB Atlas from jupyter notebook
- Connecting to MongoDB Atlas from Compass
- FAQs and troubleshooting

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MongoDB Atlas account creation



This video is in me showing you some functionalities with pgadmin. (Passcode: [E@dYh3*u](#)). In this video, you will be getting information on the following things.

- Just me talking - not sure why it took 2 minutes (00:00 - 01:50)
- Creating an account in MongoDB Atlas (01:50 - 05:45)
- Creating a cluster/Deploying a database (05:45 - 08:50)
- Setting up username and password (08:50 - 10:35)
- Whitelisting IP address (10:35 - 12:50)
- Final look at the cluster and see what all we want to connect to (12:50 - 15:15)
- The information you want to connect from your jupyter notebook (15:15 - end)
 - We want to connect from 2 sources: one uses jupyter notebook, and the other uses MongoDB Compass. Details on it in the next 2 videos.

Connecting to MongoDB Atlas from jupyter notebook



This video show you how to connect to MongDB atlas from jupyter notebook. (Passcode: [E@dYh3*u](#)). In this video, you will be getting information on the following things.

Passcode:

- small intro with cluster, saying we need to connect via jupyter notebook and MongoDB Compass (00:00 - 01:00)
- ***Loading the sample data: You are going to use this data for lectures and lab*** (01:00 - 02:50)
- Just exploring the data we loaded and making sure it is there (02:50 - 04:00)
- Collecting information you want to the mongoDB from jupyter notebook - like the hostname, the username (04:00 - 05:45)
- Connecting to the database from jupyter notebook/ setting up credentials_mongodb.json file (05:45 - 07:50)
- Just running my notebook to show you that it is working (07:50 - end)

[Skip to main content](#)

Connecting to MongoDB Atlas from Compass

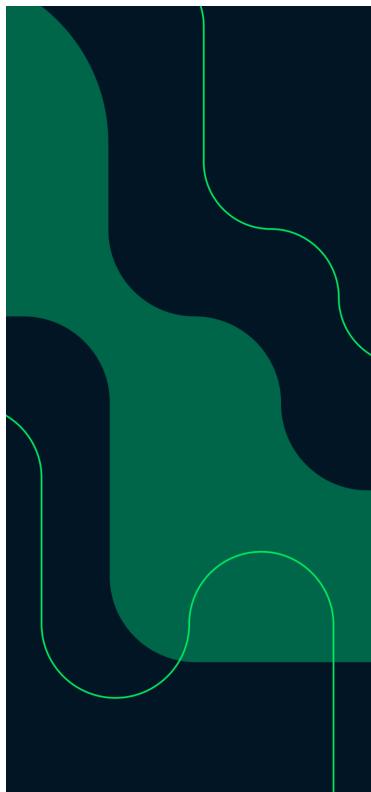


This video is showing GUI interface for interacting with MongoDB (MongoDB compass). (Passcode: [E@dYh3*u](#)). In this video, you will be getting information on the following things.

- Opening MongoDB Compass (00:00 - 01:45)
- Collecting information you want from MongoDB atlas (the connection URL) to connect from compass (01:45 - 02:45)
- Quick exploration of the GUI (02:45 - end)
 - seeing databases
 - seeing collections (helpful for lab)
 - seeing documents
 - exploring schema (helpful for lab)
 - analyzing schema (helpful for lab)

MongoDB atlas account creation

You must first set up an account in [mongoDB atlas](#). MongoDB Atlas is a cloud service that MongoDB provides.





Great, now verify your email



Check your inbox at [████████@gmail.com](#) and click the verification link inside to complete your registration. This link will expire shortly, so verify soon!

Don't see an email? Check your spam folder.

Link expired? [Resend verification email](#)

MBot from MongoDB

Hey there 

Are you ready to begin your MongoDB Atlas adventure? Join us for a free introduction to MongoDB 

Intro to MongoDB

November 30th | 11am ET

Seats are limited, reserve your spot today!

I'm in! How do I sign up?

I'm ready to learn now. Do you have some documentation?

No, thanks.



After you verify your email address, you will see a screen like the one below. Here are my options, but you can select whatever you want.

[Skip to main content](#)

Welcome to Atlas!

Tell us a few things about yourself and your project.

What is your goal today?

Your answer will help us guide you to successfully getting started with MongoDB Atlas.

- Learn MongoDB
- Migrate an existing application
- Explore what I can build
- Build a new application

What type of application are you building?

Business Intelligence

What is your preferred language?

We'll use this to customize code samples and content we share with you. You can always change this later.

Python

Next, it takes me to a screen to create a cluster.

cloud.mongodb.com

Deploy your database | Cloud: MongoDB Cloud

Verify Email | MongoDB

MongoDB.

You are screen sharing. Stop Share

Deploy your database

Use a template below or set up [advanced configuration options](#). You can also edit these configuration options once the cluster is created.

M10	\$0.08/hour
For production applications with sophisticated workload requirements.	
STORAGE 10 GB	RAM 2 GB
vCPU 2 vCPUs	

SERVERLESS	\$0.10/1M reads
For application development and testing, or workloads with variable traffic.	
STORAGE Up to 1TB	RAM Auto-scale
vCPU Auto-scale	

M0	FREE
For learning and exploring MongoDB in a cloud environment.	
STORAGE 512 MB	RAM Shared
vCPU Shared	

Provider

AWS (highlighted)

Google Cloud

Region

FREE

Create

Free forever! Your M0 cluster is ideal for experimenting in a limited sandbox. You can upgrade to a production cluster anytime.

I'll deploy my database later

Skip to main content

Going with all the default options will be fine, and click on Create Cluster.

The screenshot shows the MongoDB Cloud interface for creating a new cluster. The provider is set to AWS. The region is selected as Oregon (us-west-2). The cluster name is 'Cluster0'. Under the 'Tag (optional)' section, there are two input fields: 'Select or enter key' and 'Select or enter value'. At the bottom, there is a large green 'FREE' button. To the right of the button, a message says 'Free forever! Your MO cluster is ideal for experimenting in a limited sandbox. You can upgrade to a production cluster anytime.' Below this message is a link 'I'll deploy my database later' and a small icon of a person with a speech bubble.

If you click on advanced options (you don't want to), you will see more options like below. I am going with the default options here as well.

The screenshot shows the MongoDB Atlas interface for creating a shared cluster. The provider is set to AWS and the region is Oregon (us-west-2). The cluster type is 'Shared'. A modal window titled 'For learning and exploring MongoDB in a sandbox environment. Basic configuration controls.' is open, containing information about no credit card required and upgrading to dedicated clusters for full functionality. Below the modal, there are tabs for 'NORTH AMERICA', 'EUROPE', and 'AUSTRALIA', each with a list of regions. The 'Oregon (us-west-2)' region is highlighted with a green border. At the bottom, there is a 'FREE' button and a note about the cluster being ideal for experimentation in a limited sandbox.

[Skip to main content](#)

Cluster Tier

M0 Sandbox (Shared RAM, 512 MB Storage) Encrypted

Hourly price is for a MongoDB replica set with 3 data bearing servers.

Shared Clusters for development environments and low-traffic applications

Tier	RAM	Storage	vCPU	Price
<input checked="" type="checkbox"/> M0 Sandbox	Shared	512 MB	Shared	Free forever
M0 clusters are best for getting started, and are not suitable for production environments.				
500 max connections Low network performance		100 max databases 500 max collections		
M2	Shared	2 GB	Shared	\$9 / MONTH
M5	Shared	5 GB	Shared	\$25 / MONTH

Additional Settings

MongoDB 6.0, No Backup

FREE Free forever! Your M0 cluster is ideal for experimenting in a limited sandbox. You can upgrade to a production cluster anytime.

Create Cluster

Setting up username and password

After you click on Create Cluster, it will take you to a screen like the one below. It will take some time to create the cluster. In the below screen, you want to set up your username and password.

Important

Don't forget your username and password. You will need it to connect to the database.

Whitelisting IP address

Now, you need to add the IP addresses from which your database has access. Here, you will be given access to your laptop's IP address. Depending on the router, the IP might change, so if you want to make sure that it always accepts connections, you can add 0.0.0.0/0 to the IP, and it will accept connections from any IP address (This is not a good practice, but for now we will do it.).

NOTE: I am also showing you how to add an IP address in the video.

[Skip to main content](#)

Where would you like to connect from?

Enable access for any network(s) that need to read and write data to your cluster.

My Local Environment
Use this to add network IP addresses to the IP Access List. This can be modified at any time.

Cloud Environment
Use this to configure network access between Atlas and your cloud or on-premise environment. Specifically, set up IP Access Lists, Network Peering, and Private Endpoints.

Add entries to your IP Access List

Only an IP address you add to your Access List will be able to connect to your project's clusters. You can manage existing IP entries via the [Network Access Page](#).

IP Address **Description**

[REDACTED] My IP Address Add My Current IP Address

Cancel Update Entry

IP Access List **Description**

[REDACTED] 2/32 My IP Address EDIT REMOVE

Finish and Close

Loading the sample data

Click on load sample data.

cloud.mongodb.com

Your MongoDB Email Address - g2g.mds@gmail.com - ... Database Deployments | Cloud: MongoDB Cloud Lecture 8: MongoDB introduction/SQL 1 — BAIT 580A... Verify Email | MongoDB All Clusters Get Help gittu

Atlas gittu's Org - ... Access Manager Billing

Project 0 NEW

GITTU'S ORG - 2023-11-15 > PROJECT 0

Database Deployments

Find a database deployment...

Cluster0 Connect View Monitoring Browse Collections ... Edit Config Create

Load sample datasets to Cluster0. Atlas provides sample data you can load into your Atlas clusters. You can use this data to quickly get started exploring with data in MongoDB. Load sample dataset Dismiss

Visualize Your Data Build dashboards and charts, and embed them in your apps with MongoDB Charts. Dismiss Explore Charts

Cluster0 R 0 W 0 Last 22 minutes 100.0/s Edit Configuration Command Line Tools Load Sample Dataset Terminate FREE SHARED

In 67.4 B/s Out 0.0 B/s Last 22 minutes 318.0 B/s Data Size 0.0 B / 512.0 MB (0%) Last 22 minutes 512.0 MB

VERSION	REGION	CLUSTER TIER	TYPE	BACKUPS	LINKED APP SERVICES	ATLAS SQL	ATLAS SEARCH
6.0.11	AWS / Oregon (us-west-2)	M0 Sandbox (General)	Replica Set - 3 nodes	Inactive	Unable to load application data	Connect	Create Index

+ Add Tag

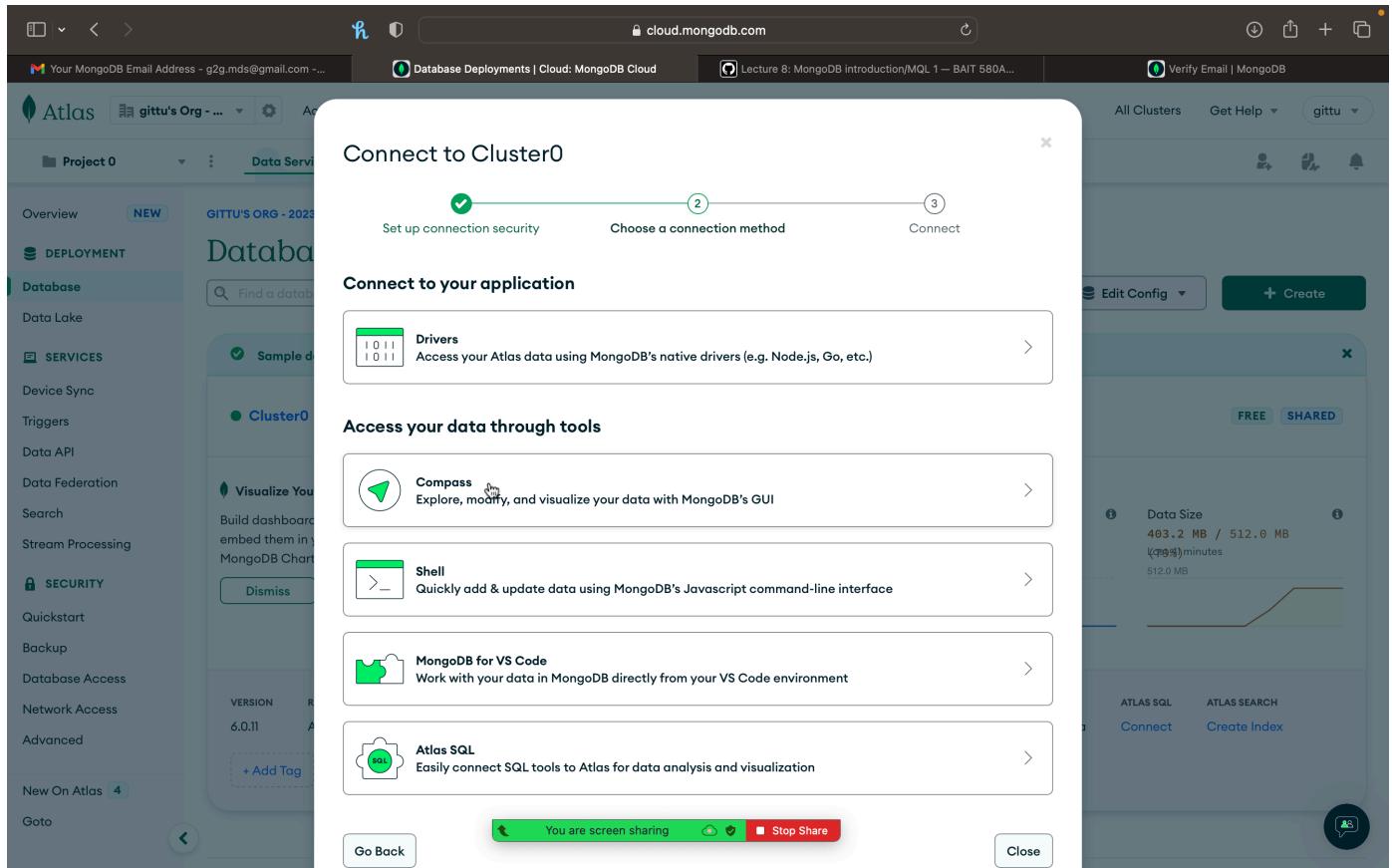
Skip to main content

It will take some time to load the data. You can see the progress on the following screen.

After it is done, you will see a screen like below.

Connecting to MongoDB from compass

Click on the connect button on the cluster you created. Then select connect with MongoDB Compass.



You will see all the instructions for connecting to the database. This includes downloading the compass application based on the OS and then using the connection string to connect to the database.

[Skip to main content](#)

Connect to Cluster0

Set up connection security

Choose a connection method

Connect



Connecting with MongoDB Compass

I don't have MongoDB Compass installed

I have MongoDB Compass installed

1. Select your operating system and download MongoDB Compass

macOS 64-bit (10.14+)

Download Compass (1.40.4)

or

Copy download URL

Compass is an interactive tool for querying, optimizing, and analyzing your MongoDB data.

2. Copy the connection string, then open MongoDB Compass

mongodb+srv://g2gmds:<password>@cluster0.rjjc4dz.mongodb.net/



Replace **<password>** with the password for the **g2gmds** user.

When entering your password, make sure that any special characters are [URL encoded](#).

RESOURCES

[Connect with Compass](#)

[Access your Database Users](#)

[Import and Export Data](#)

[Troubleshoot Connections](#)

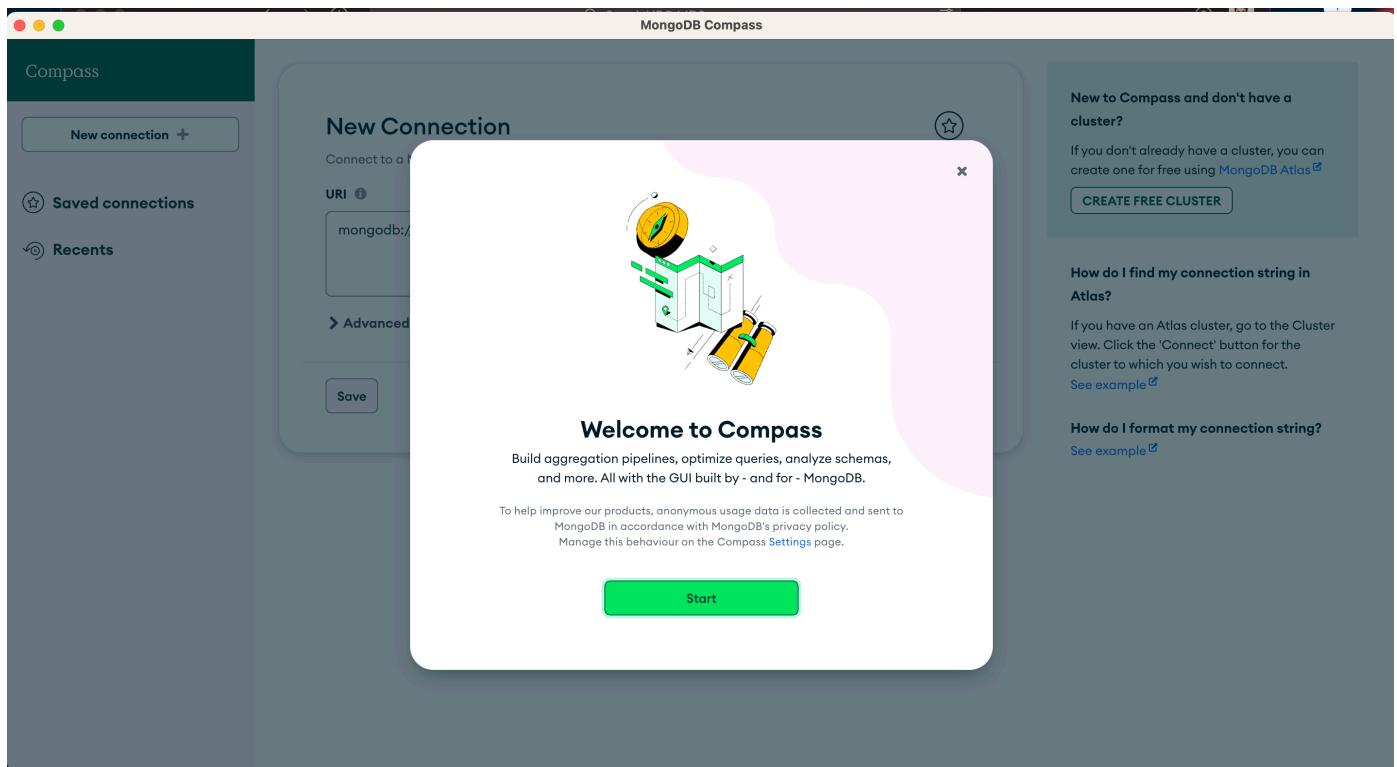
[Go Back](#)

[Close](#)

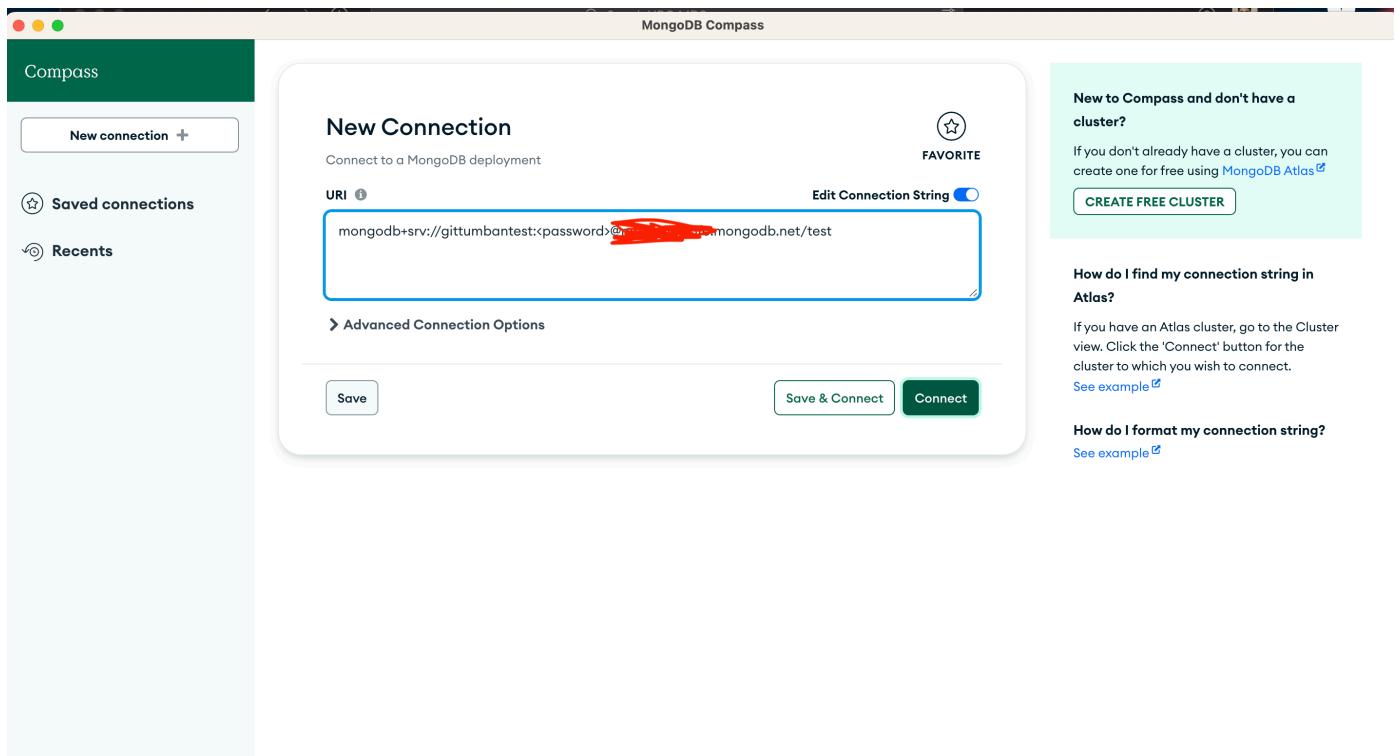
After opening the app,

Welcome screen after installation;

[Skip to main content](#)

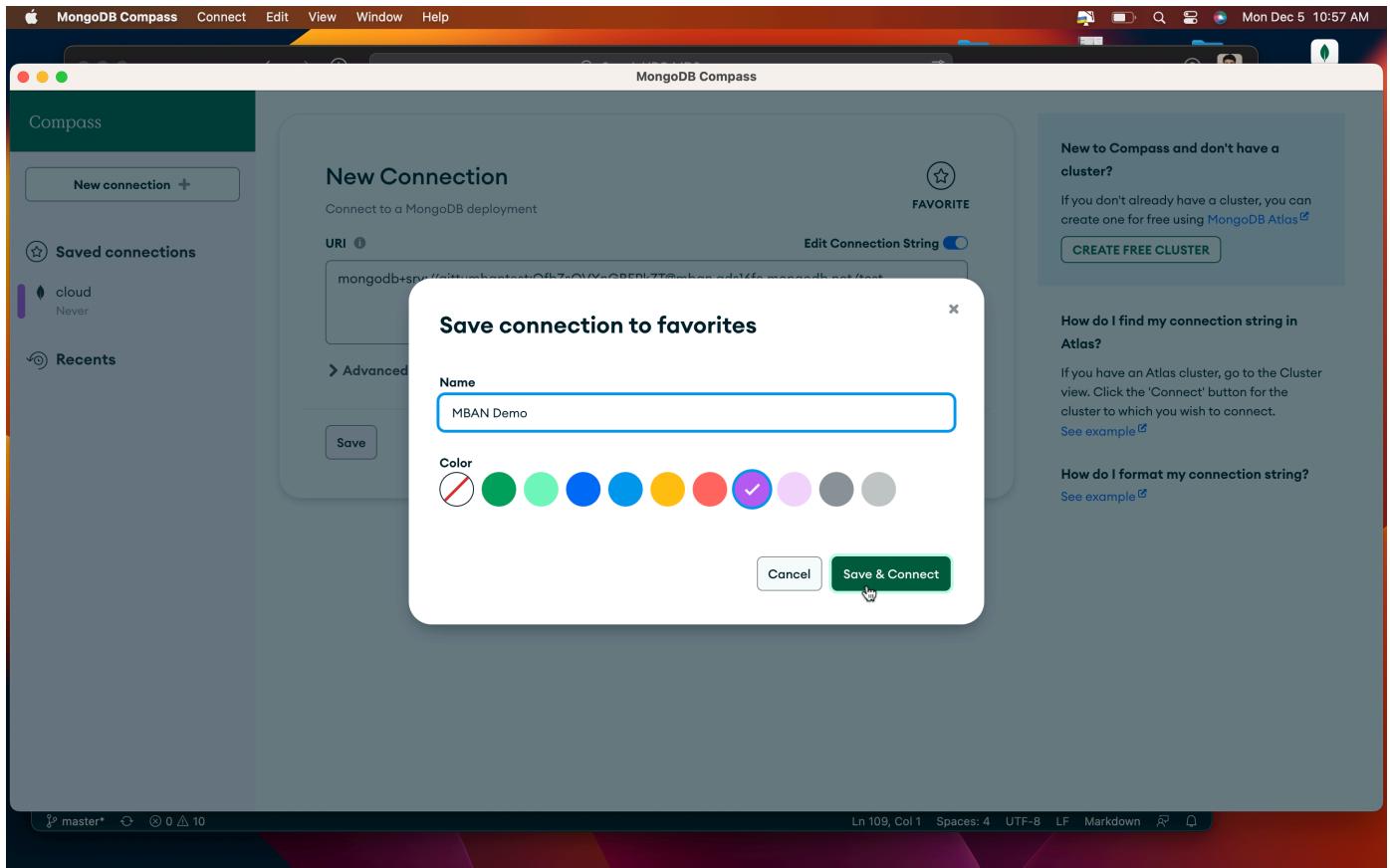


Connect to the database you set up in the cloud; paste the connection string here by updating the password, and it is ready to go.

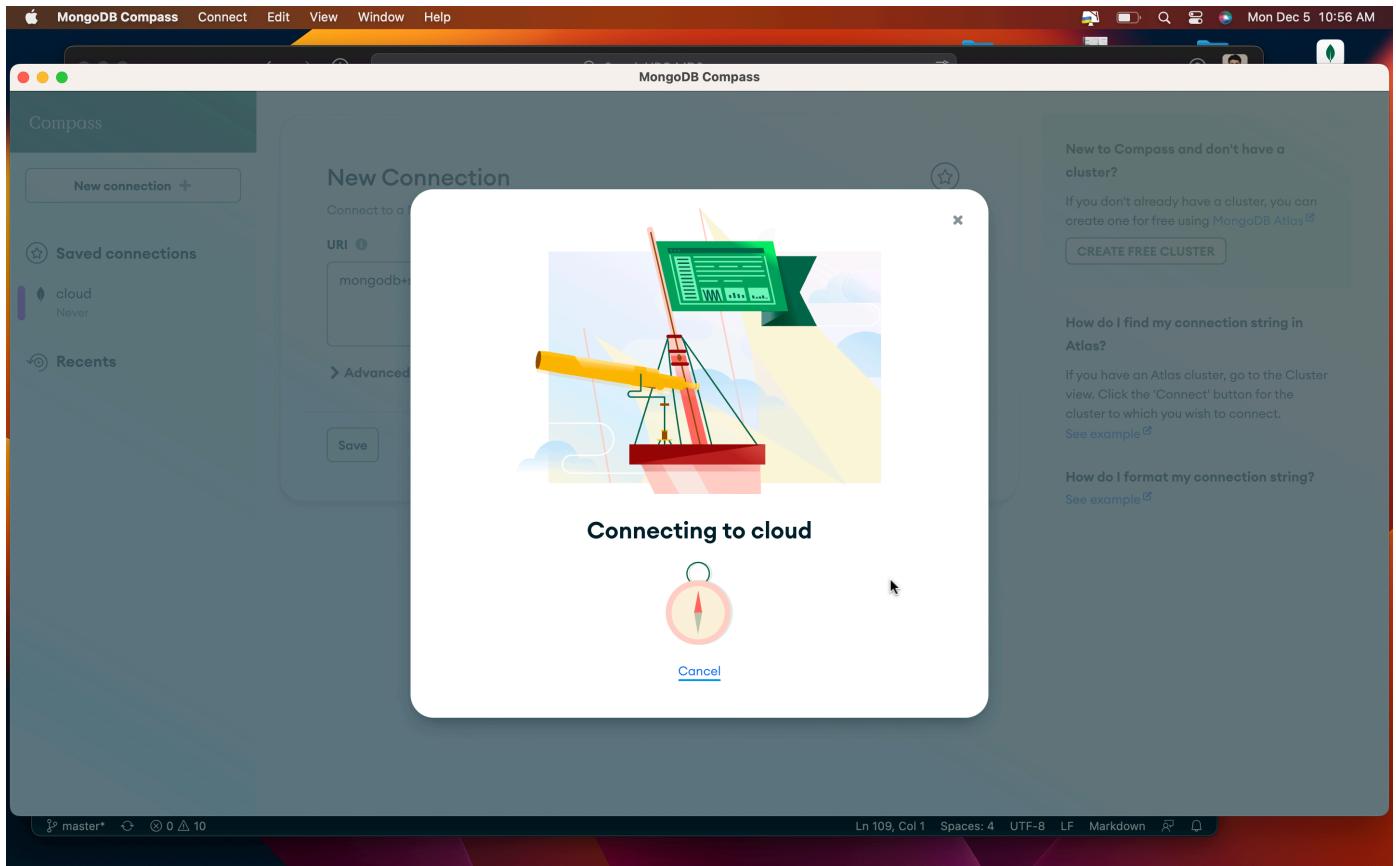


You can save the connection for future use;

[Skip to main content](#)



It might take some time to complete the connection;



Once the connection is complete, you will be taken to this screen. You can see all the databases there. All these are dummy

[Skip to main content](#)

No saved queries yet.

Start saving your aggregations and find queries, you'll see them here.

Not sure where to start? [Visit our Docs →](#)

Exploring the schema of the database;

sample_mflix.embedded_movies

3.5k DOCUMENTS 1 INDEXES

_id objectid

awards document

nominations int32

70%
35%
0% min: 0 max: 132

[Skip to main content](#)

Connecting to MongoDB from your notebook

Now, we are done with all the deployments. It is time to connect to it. We are connecting it from jupyter notebook.

Add a credentials_mongodb.json file to your directory with the following information.

```
{  
  "host": "<your_host>",  
  "port": 27017,  
  "username": "<your_username>",  
  "password": "<your_password>"  
}
```

Then, call the file in your notebook as follows. Please make sure you are using the course environment to run this notebook.

```
from pymongo import MongoClient  
import json  
import urllib.parse  
  
with open('data/credentials_mongodb.json') as f:  
    login = json.load(f)  
  
    username = login['username']  
    password = urllib.parse.quote(login['password'])  
    host = login['host']  
    url = "mongodb+srv://{}:{}@{}/?retryWrites=true&w=majority".format(username, password, host)
```

```
client = MongoClient(url)
```

Accessing databases

```
client.list_database_names()
```

Accessing collections

```
my_collection = my_db['sample_mflix']  
my_collection
```

Note

More details when I release lecture notes for lectures 7 and 8.

Note

- If you want to log back in, you can use this URL
- They will go to an inactive state if you don't use them for some time. You can connect just like how you used to, but it will take some time to boot up.

FAQs (some common installation issues)

[Skip to main content](#)

```
ServerSelectionTimeoutError: ac-6txag5o-shard-00-02.fixvcgm.mongodb.net:27017: [SSL: CERTIFICATE_VERIFY_F/
```

then you can do the following to resolve the issue.

```
import certifi  
ca = certifi.where()  
client = MongoClient(url,tlsCAFile=ca)
```

instead of

```
client = MongoClient(url)
```

 **Note**

You might need to install following from your jupyter if you get error when trying to import certifi

```
!pip install certifi
```

2) If you are seeing your connection bouncing then you haven't whitelisted your IP address. You can do it by following the instructions above.

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DEPLOYMENT

Database PREVIEW

SERVICES

Triggers

Data API

Data Federation

SECURITY

Quickstart

Database Access

Network Access

Advanced

Network Access

IP Access List Peering Private Endpoint

+ ADD IP ADDRESS

You will only be able to connect to your cluster from the following list of IP Addresses:

IP Address	Comment	Status	Actions
[REDACTED] (includes your current IP address)		Active	<button>EDIT</button> <button>DELETE</button>
[REDACTED]	My IP Address	Active	<button>EDIT</button> <button>DELETE</button>
0.0.0.0/0 (1 WEEK) (includes your current IP address)		Active	<button>EDIT</button> <button>DELETE</button>

Add IP Access List Entry

Atlas only allows client connections to a cluster from entries in the project's IP Access List. Each entry should either be a single IP address or a CIDR-notated range of addresses. [Learn more](#).

ALLOW ACCESS FROM ANYWHERE

Access List Entry:

Enter IP Address or CIDR Notation

Comment:

Optional comment describing this entry



This entry is temporary and will be deleted in

6 hours ▾

Cancel

Confirm

3) An error occurred loading sample data: Target cluster has conflicting non-empty namespace with the dataset.

If you get this error when you try to load the sample data, you already have the same database within your Mongo cluster. You can delete the existing data from the database and reinitiate the process. There are many ways in which you can delete it, but the easiest way is to delete it from your mongo atlas. Here are a couple of screenshots to guide you through.

Navigate to the collection and delete all the databases that you see there, like below.

[Skip to main content](#)

1

sample_airbnb.listingsAndReviews

STORAGE SIZE: 51.95MB LOGICAL DATA SIZE: 89.99MB TOTAL DOCUMENTS: 5555 INDEXES TOTAL SIZE: 644KB

Find Indexes Schema Anti-Patterns Aggregation Search Indexes

Filter Type a query: { field: 'value' } **Reset** **Apply** **Options**

QUERY RESULTS: 1-20 OF MANY

```
_id: "10006546"
listing_u... : "https://www.airbnb.com/rooms/10006546"
na... : "Ribeira Charming Duplex"
summa... : "Fantastic duplex apartment with three bedrooms, located in the histori..."
space: "Privileged views of the Douro River and Ribeira square, our apartment ..."
descript... : "Fantastic duplex apartment with three bedrooms, located in the histori..."
neighborhood_overview... : "In the neighborhood of the river, you can find several restaurants as ..."
notes: "Lose yourself in the narrow streets and staircases zone, have lunch in..."
trans... : "Transport: • Metro station and S. Bento railway 5min; • Bus stop a 50 m"
acce... : "We are always available to help guests. The house is fully available t..."
interact... : "Cot - 10 € / night Dog - € 7,5 / night"
house_rule... : "Make the house your home..."
```

property_ty... : "House"

After that, revisit the load data and add sample data like the one below.

Explore Your Data

- **Find:** run queries and interact with documents
- **Indexes:** build and manage indexes
- **Aggregation:** test aggregation pipelines
- **Search:** build search indexes

Load a Sample Dataset **Add My Own Data**

Learn more in Docs and Tutorials [?]

If this leads to getting an error like the below, then wait wait wait..... I got this in the process, as it takes some time to clean things up and get back to a consistent state.

[Skip to main content](#)

Atlas gittu's Org - ... Access Manager Billing All Clusters Get Help gittu

Project 0 Data Services App Services Charts

Overview DEPLOYMENT Cluster0 VERSION 6.0.12 REGION AWS Oregon (us-west-2)

Database Data Lake SERVICES Device Sync Triggers Data API Data Federation Atlas Search Stream Processing SECURITY Quickstart Backup Database Access Network Access Advanced Goto

OVERVIEW REAL TIME METRICS COLLECTIONS ATLAS SEARCH PROFILER PERFORMANCE ADVISOR ONLINE ARCHIVE CMD LINE TOOLS

DATABASES: 0 COLLECTIONS: 0

An error occurred loading sample data: Target cluster does not have enough free space to import dataset

Explore Your Data

- **Find:** run queries and interact with documents
- **Indexes:** build and manage indexes
- **Aggregation:** test aggregation pipelines
- **Search:** build search indexes

Load a Sample Dataset Add My Own Data

Learn more in Docs and Tutorials

Visualize Your Data Refresh

Feedback