THE UNIVERSITY OF SYDNEY | Faculty of Engineering
School of Computer Science

COMP5347 - Tutorial 07

This document covers the following objectives:

- Install MongoDB server as a service on local machine, with the official provided command-line tool
- Install MongoDB Compass, an official developed and maintained GUI for MongoDB
- Start MongoDB service, connect to MongoDB from CML and GUI, and import JSON data from disk
- Hands-on creating a MongoDB database and collection in it.

Part 1. Install MongoDB Server on Your Computer

macOS

1. Install Apple's Xcode command-line tools (this is required for every developer who wants to utilize mac's power to do development, it may takes minutes to download and install)

```
xcode-select –install
```

2. Install HomeBrew — a package manager for macOS, similar to apt/yum for Linux, npm for Node, or pip for Python (This is also recommended to install if you use macOS as your development environment)

```
/bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"
```

3. Using HomeBrew to install mongoDB (version 4.4 is recommended):

```
brew tap mongodb/brew
brew install mongodb-community@4.4
```

The installation includes the following binaries:

- The `mongod` server
- The mongos sharded cluster query router
- The MongoDB Shell, `mongosh`

4. After installation, run mongoDB as a service

```
brew services start mongodb-community@4.4
```

To verify that MongoDB is running, perform the following command:

```
brew services list
```

You will see mongodb-community@[your_version] is started.

```
~ INSERT ✔ brew services list                                    ✔ 10125 23:57:40
Name                 Status  User     File
mongodb-community@4.4 started hunterxu ~/Library/LaunchAgents/homebrew.mxcl.mongodb-community@4.4.pl
ist
mysql                started hunterxu ~/Library/LaunchAgents/homebrew.mxcl.mysql.plist
redis                started hunterxu ~/Library/LaunchAgents/homebrew.mxcl.redis.plist
tomcat               none
unbound              none
~ INSERT ✔                                                       ✔ 10129 11:08:55
```

5. Run MongoDB in the terminal:

```
mongo
```

```
~ INSERT ✔ mongo                                                 ✔ 10129 11:08:55
MongoDB shell version v4.4.13
connecting to: mongodb://127.0.0.1:27017/?compressors=disabled&gssapiServiceName=mongodb
Implicit session: session { "id" : UUID("d2543ea0-d26c-49ee-9c2d-7595a5dc7a8b") }
MongoDB server version: 4.4.13
---
The server generated these startup warnings when booting:
        2022-04-03T23:54:36.245+10:00: Access control is not enabled for the database. Read and writ
e access to data and configuration is unrestricted
---
---
        Enable MongoDB's free cloud-based monitoring service, which will then receive and display
        metrics about your deployment (disk utilization, CPU, operation statistics, etc).

        The monitoring data will be available on a MongoDB website with a unique URL accessible to y
ou
        and anyone you share the URL with. MongoDB may use this information to make product
        improvements and to suggest MongoDB products and deployment options to you.

        To enable free monitoring, run the following command: db.enableFreeMonitoring()
        To permanently disable this reminder, run the following command: db.disableFreeMonitoring()
---
>
```

Type `quit()` to escape from command-line program.

Or use `mongosh`, it is a official developed mongoDB command-line tool:

```
> quit()
~ INSERT ✔ mongosh                                               ✔ 10129 11:16:19
Current Mongosh Log ID: 624b9892105b044f5b70b96f
Connecting to:          mongodb://127.0.0.1:27017/?directConnection=true&serverSelectionTimeoutMS=20
00&appName=mongosh+1.3.1
Using MongoDB:          4.4.13
Using Mongosh:          1.3.1

For mongosh info see: https://docs.mongodb.com/mongodb-shell/


To help improve our products, anonymous usage data is collected and sent to MongoDB periodically (ht
tps://www.mongodb.com/legal/privacy-policy).
You can opt-out by running the disableTelemetry() command.

------
   The server generated these startup warnings when booting:
   2022-04-03T23:54:36.245+10:00: Access control is not enabled for the database. Read and write acc
ess to data and configuration is unrestricted
------

Warning: Found ~/.mongorc.js, but not ~/.mongoshrc.js. ~/.mongorc.js will not be loaded.
  You may want to copy or rename ~/.mongorc.js to ~/.mongoshrc.js.
test>
```

> **NOTE**
>
> **macOS Prevents mongosh From Opening**
>
> macOS may prevent `mongosh` from running after installation. If you receive a security error when starting `mongosh` indicating that the developer could not be identified or verified, do the following to grant `mongosh` access to run:
>
> - Open *System Preferences*
> - Select the *Security and Privacy* pane.
> - Under the *General* tab, click the button to the right of the message about `mongosh`, labelled either **Open Anyway** or **Allow Anyway** depending on your version of macOS.

Then you can jump to Part 2. Download MongoDB GUI (the desktop version)

Troubleshooting

If your terminal can't find mongo command:

For Apple Intel (not M1) Processors:

IMPORTANT: only execute the commands below if you are using MongoDB version 4.4:

```
echo 'export PATH="$PATH:/usr/local/Cellar/mongodb-community@4.4/4.4.13/bin"' >> ~/.zshrc
```

If you are using Apple M1 Processor or later, please execute the following command after you installed MongoDB using brew:

IMPORTANT: only execute the commands below if you are using MongoDB version 4.4:

```
echo 'export PATH="$PATH:/opt/homebrew/Cellar/mongodb-community@4.4/4.4.13/bin"' >> ~/.zshrc
```

Then

```
source ~/.zshrc
```

Then

```
mongo
```

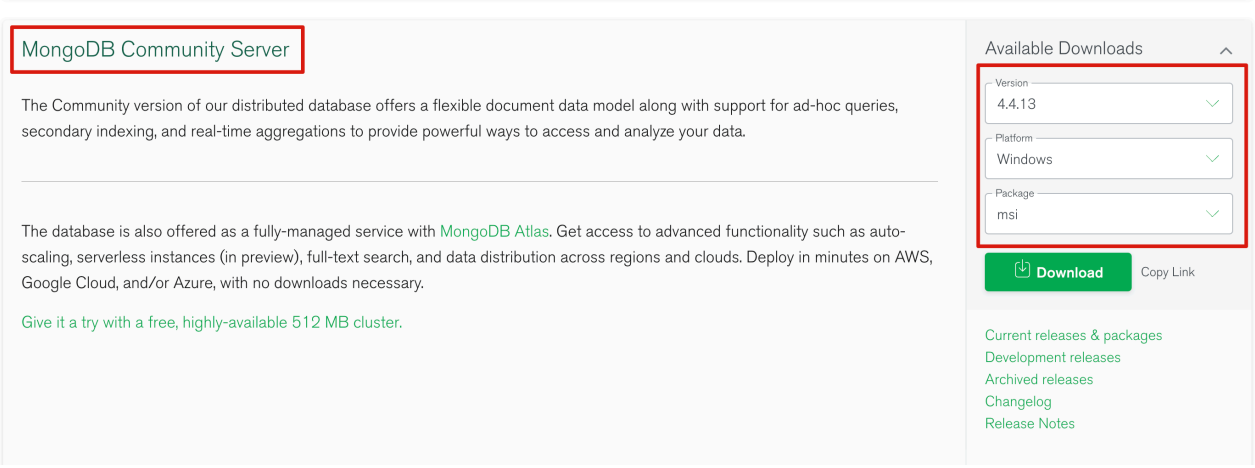
If the MongoDB server runs, everything is fine. then you can type

```
quit()
```

to quit() the application in the terminal.

Windows

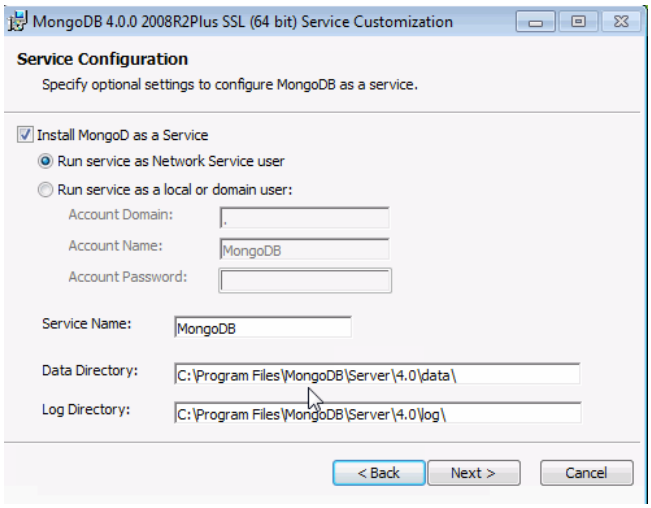
Download link: https://www.mongodb.com/try/download/community



Select the version, platform, and package, then click download.

After downloading the .msi package, double click it and then follow the installation instructions.

Note: Install MongoDB as a service



Linux

Please refer to this page for installation of MongoDB server for specific Linux Distros: https://www.mongodb.com/docs/manual/administration/install-on-linux/

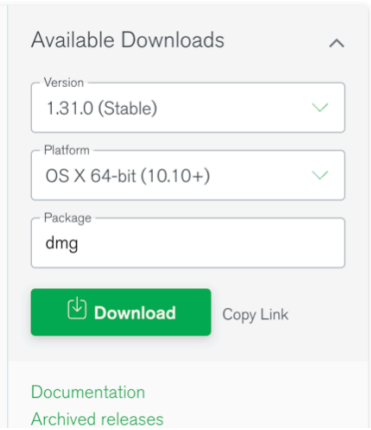
Part 2. Download MongoDB GUI — MongoDB Compass

Prior to `MongoDB Compass`, an official developed and maintained GUI for MongoDB, there are many other third-party developed GUI tools such as `Robomongo`, or `Robo 3T`, feel free to choose either of them, but here we mainly recommend using the official product.

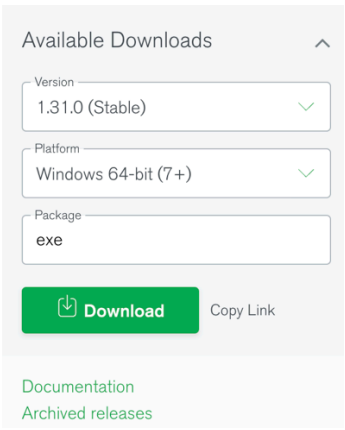
Download link: https://www.mongodb.com/try/download/compass

Chose the right platform corresponding with your operating system, then click "download", and double click the downloaded package to install it.

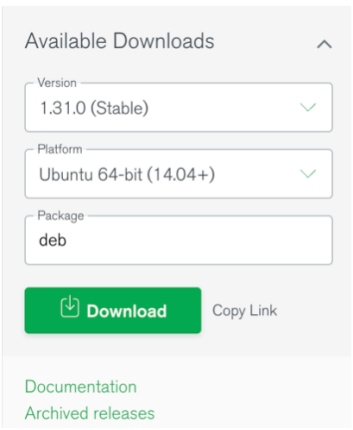
macOS



Windows



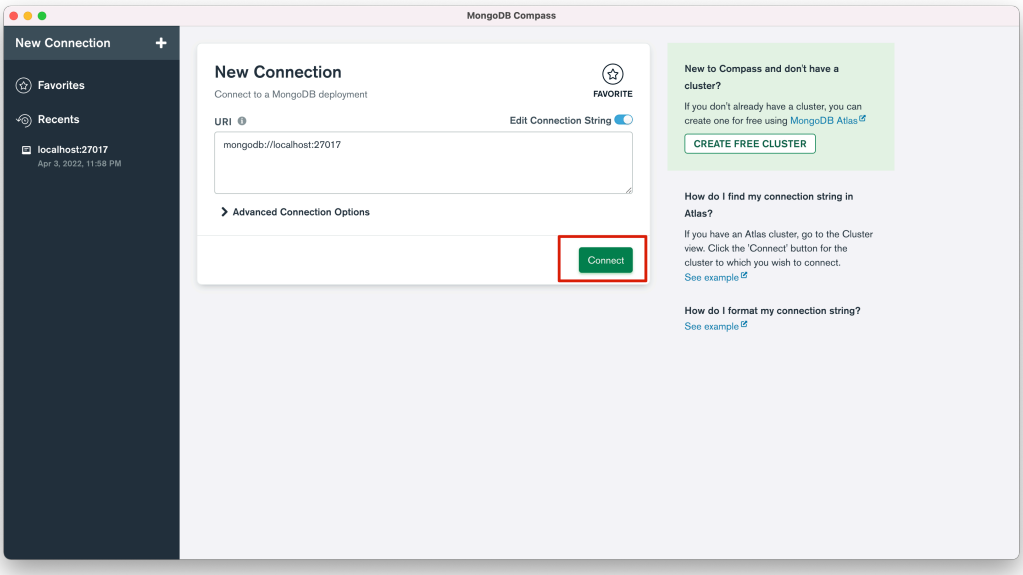
Linux (Ubuntu, Redhat)



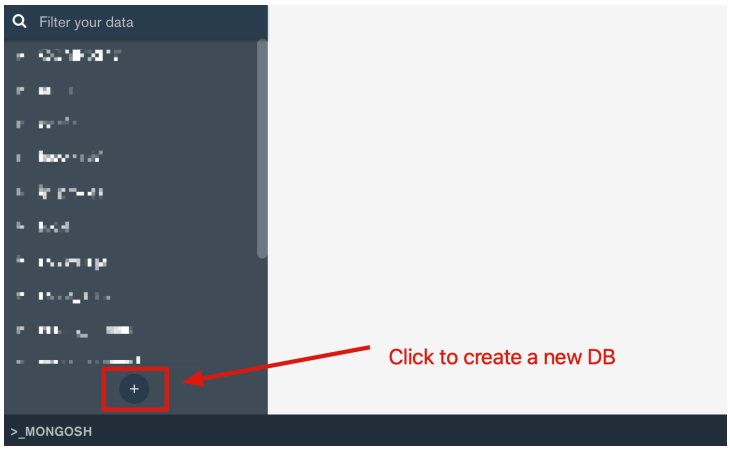
Part3. Connect to MongoDB Compass and Import JSON File

Open MongoDB Compass, with the MongoDB server/service started (you already checked it in the terminal: `mongo` or `mongosh`)

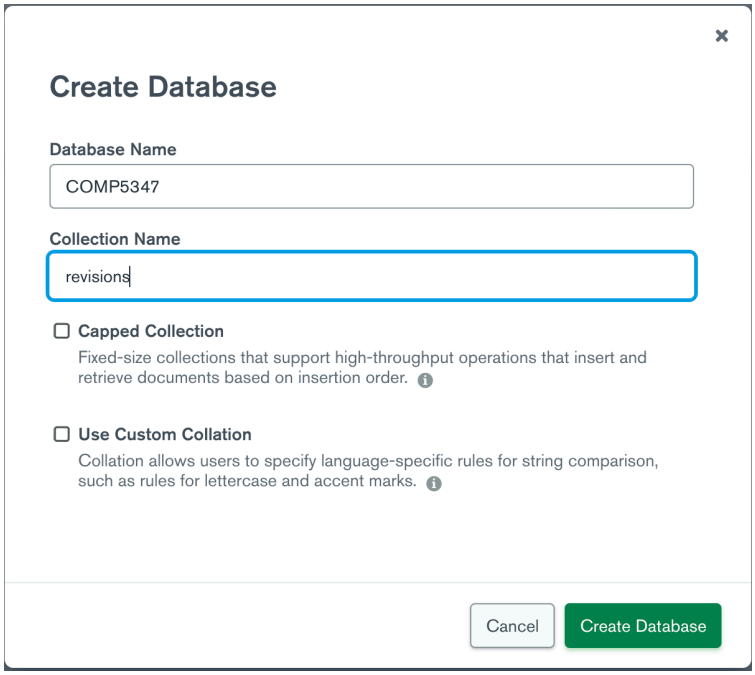
With the MongoDB Compass GUI window open, click "Connect" using the default URI Address:



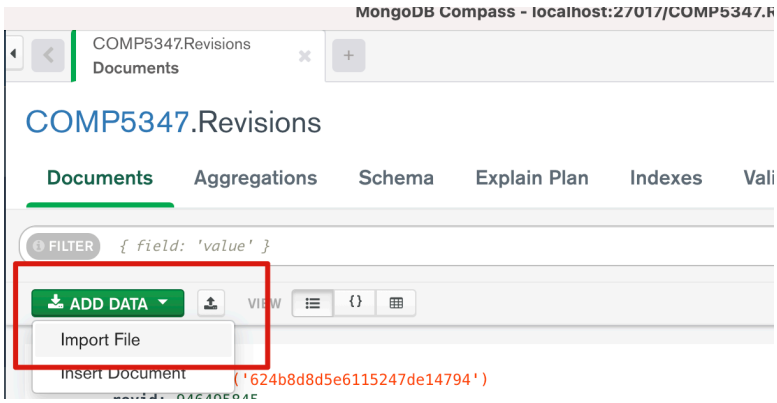
There is a "+" button in the lower left corner, click it to pop up a window to create a new Database (with name "COMP5347")

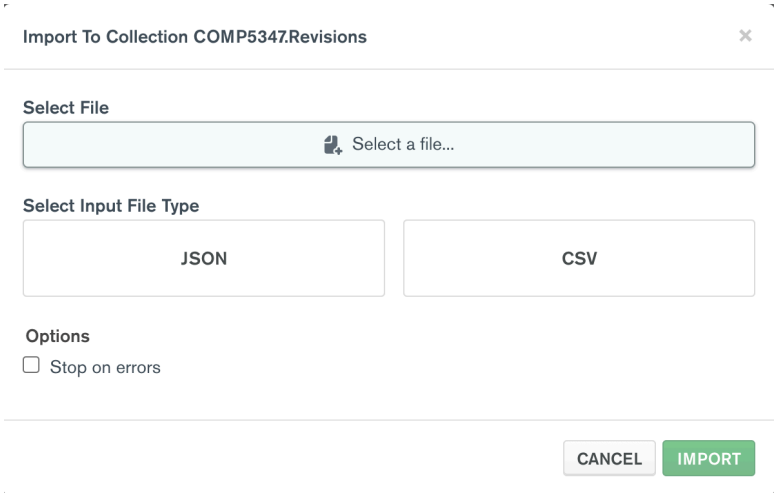


Create a new Collection with name "revisions" (each DB can contain multiple collections, they will be different models you will use in your project)

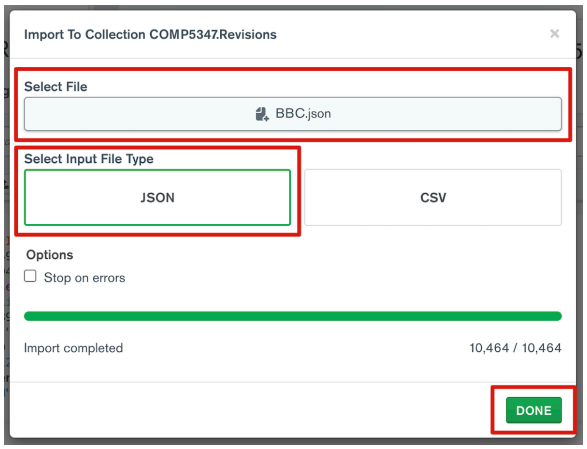


Then import data from the disk (here we are using JSON file) one by one.

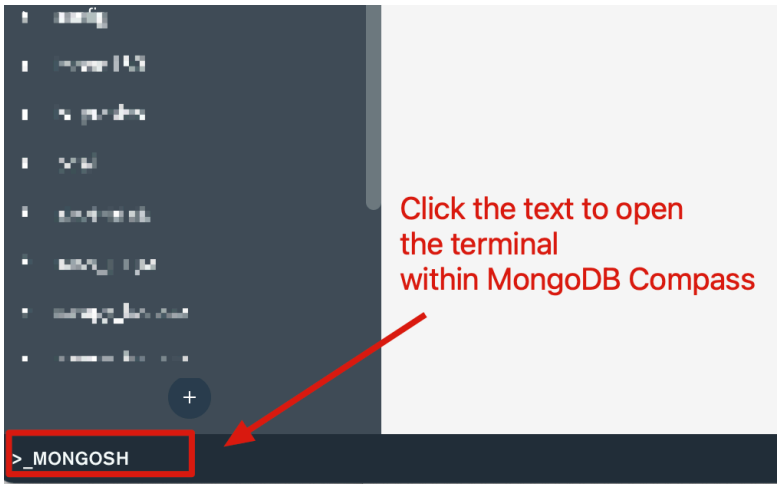




Click the button under "Select File" again to select another file and import.



You can also enter in command-line mode in MongoDB Compass GUI:



Reference

https://www.mongodb.com/docs/manual/administration/install-community/

https://www.mongodb.com/docs/manual/tutorial/getting-started/