



What is MongoDB?

MongoDB is a popular NoSQL database system that stores data in a flexible document format instead of rigid tables with rows and columns, like traditional relational databases.

Key Features of MongoDB:

Flexible Document storage:

- Unlike rigid tables, MongoDB stores data in JSON-like documents.
- This allows for more natural modelling of complex data structures and easier adaptation as data evolves.

Scalability for Growing Data:

- As your application grows and the amount of data you store increases, MongoDB can easily scale horizontally by adding more servers.

High Performance:

- Optimized for fast reads and writes, MongoDB excels in real-time applications where data needs to be accessed and updated quickly.

NoSQL database:

- Offers advantages over relational databases for certain use cases, like ease of development and flexibility.

Developer-Friendly:

- The use of JSON-like documents and a familiar query language (similar to SQL) makes MongoDB easy to learn and use for developers.

MongoDB is a popular choice for various applications :

- **Web applications:** Storing user data, content, and preferences.

- **Mobile apps:** Managing user data and application state on the backend.
- **Real-time analytics:** Storing and analyzing data streams from sensors or applications.
- **Content management systems:** Storing and managing content in a flexible way.

How to Install MongoDB on Windows?

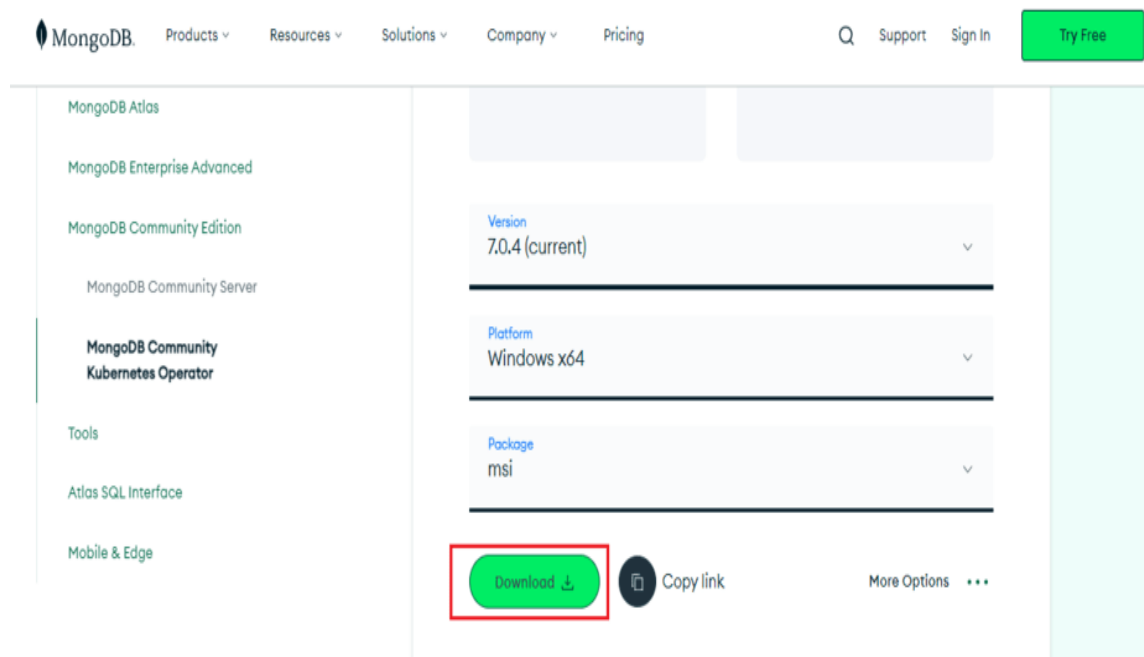
Requirements to Install MongoDB on Windows:

- MongoDB versions 4.4 and later only support 64-bit versions of Windows.
- If you're using an older version (e.g., MongoDB 7.0), supported Windows versions include:
 - ✓ Windows Server 2022 (64-bit)
 - ✓ Windows Server 2019 (64-bit)
 - ✓ Windows 11 (64-bit)

Steps to Install MongoDB on windows using MSI:

To install MongoDB on Windows, first, download the MongoDB server and then install the MongoDB shell.

STEP1: Go to the MongoDB Download Center to download the MongoDB Community Server.



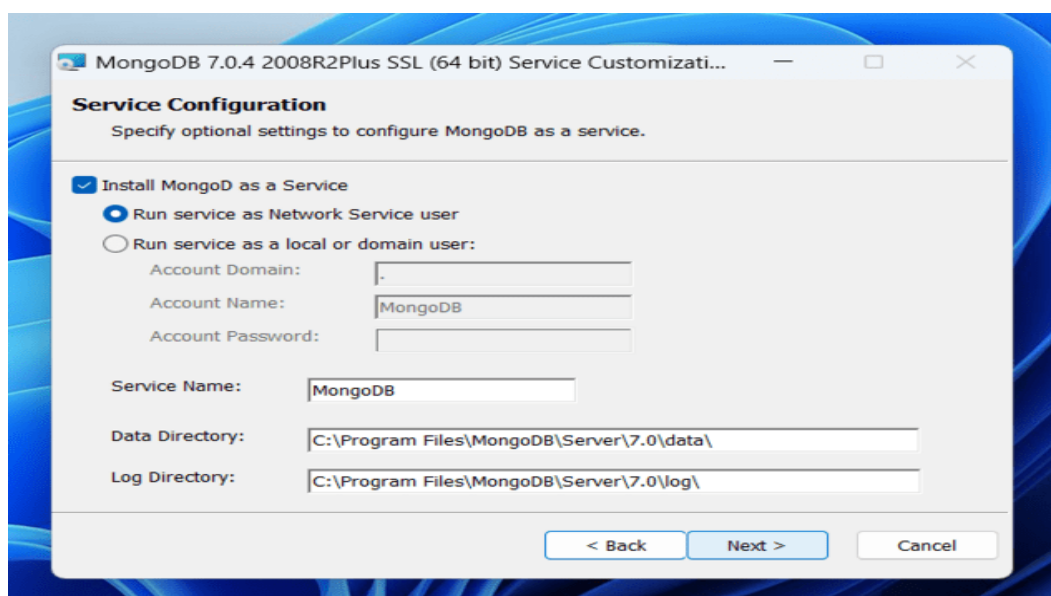
select any version, Windows, and package according to your requirement. For Windows, we need to choose:

- ✓ Version: 7.0.4
- ✓ OS: Windows x64
- ✓ Package: msi

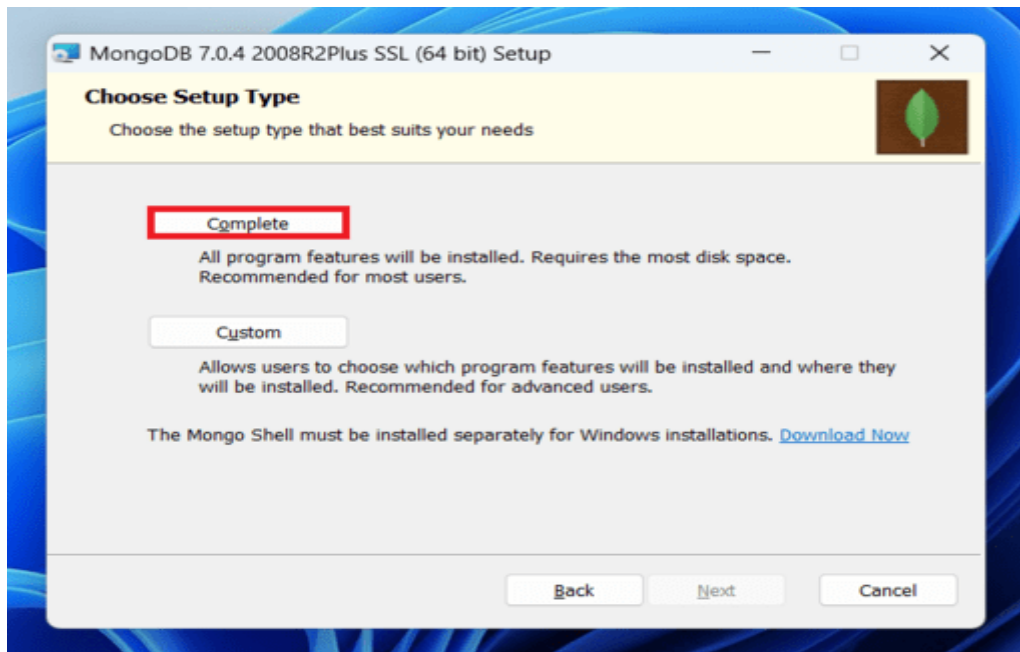
Step2: When the download is complete open the msi file and click the next button in the startup screen:



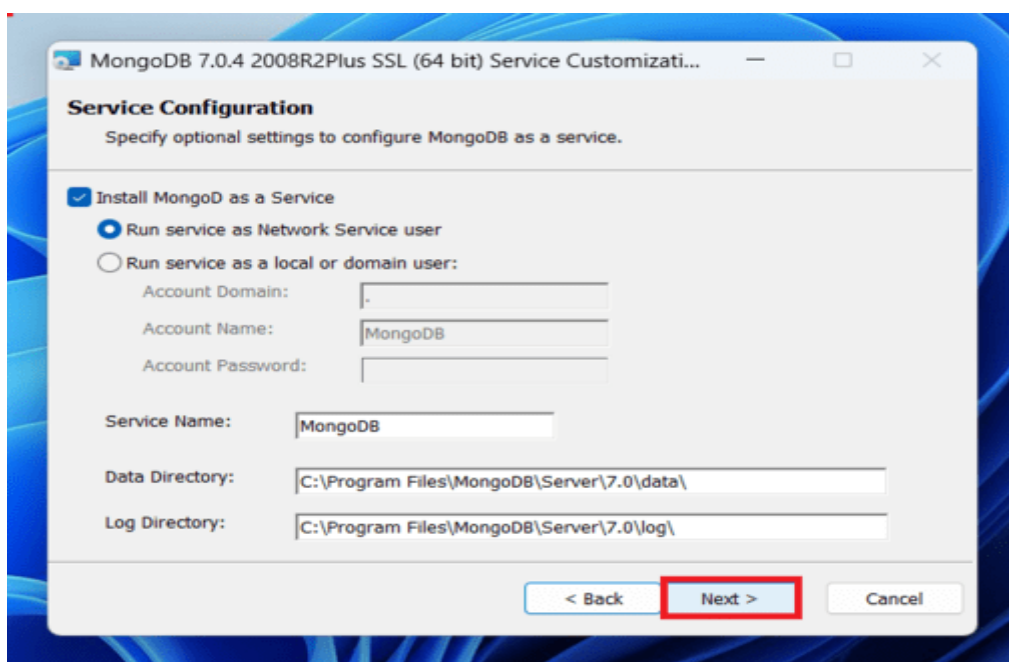
Step3: Now accept the End-User License Agreement and click the next button:



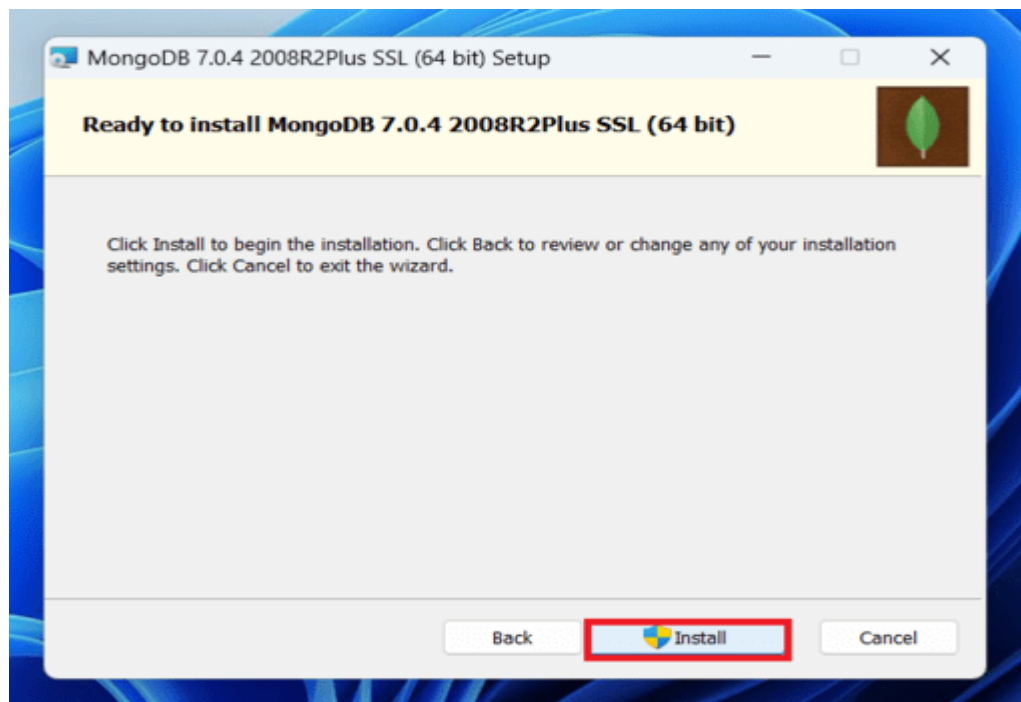
Step4: Now select the complete option to install all the program features. Here, if you can want to install only selected program features and want to select the location of the installation, then use the Custom option:



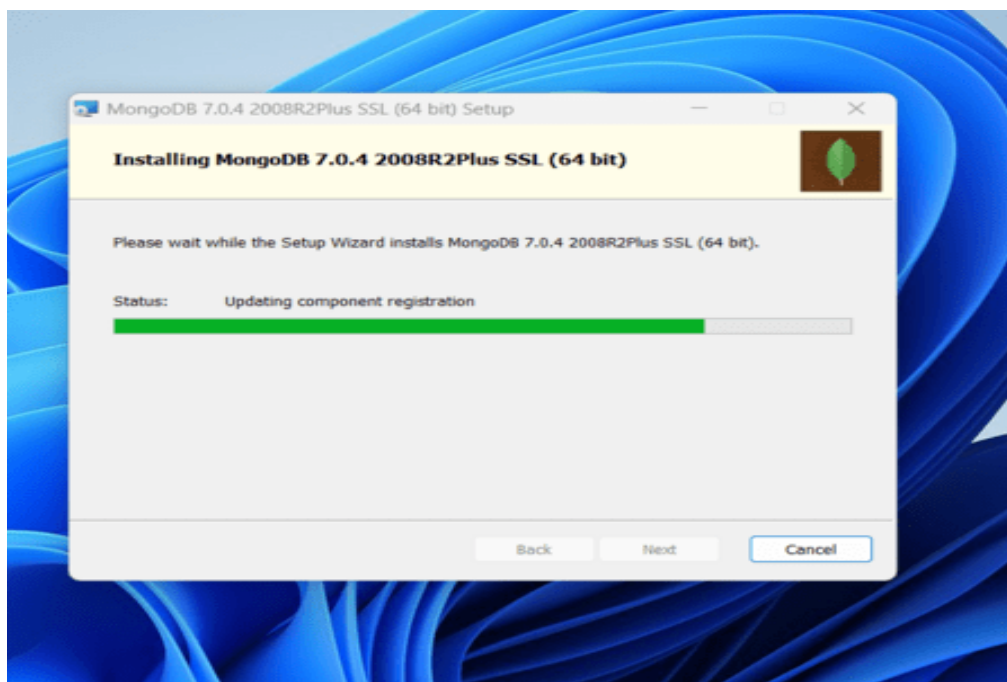
Step5: Select “Run service as Network Service user” and copy the path of the data directory. Click Next:



Step6: Click the Install button to start the MongoDB installation process:



Step:7: After clicking on the install button installation of MongoDB begins:



Step 8: [Now click the Finish button to complete the MongoDB installation process:](#)

MongoDB Mongo shell

Features:

MongoDB Mongo shell is the default client for the MongoDB database server. It's a command-line interface (CLI), where the input and output are all console-based. The Mongo shell is a good tool to manipulate small sets of data.

Here are the top features that Mongo shell offers:

- Run all MongoDB queries from the Mongo shell.
- Manipulate data and perform administration operations.
- Mongo shell uses JavaScript and a related API to issue commands.
- See previous commands in the mongo shell with up and down arrow keys.
- View possible command completions using the tab button after partially entering a command.
- Print error messages, so you know what went wrong with your commands.

MongoDB has recently introduced a new mongo shell known as **mongosh**. It has some additional features, such as extensibility and embeddability—that is, the ability to use it inside other products such as VS Code.

Installing the mongo Shell

MongoDB Shell is the quickest way to connect to (and work with) MongoDB. Easily query data, configure settings, and execute other actions with this modern, extensible command-line interface — replete with syntax highlighting, intelligent autocomplete, contextual help, and error messages.

Note: MongoDB Shell is an open source (Apache 2.0), standalone product developed separately from the MongoDB Server.


Steps to Download MongoDB Shell

Step1: [Open the MongoDB Shell download page](#) and [Open the MongoDB Download Center](#).

Version	2.2.6	▼
Platform	Windows x64 (10+)	▼
Package	zip	▼

Download 

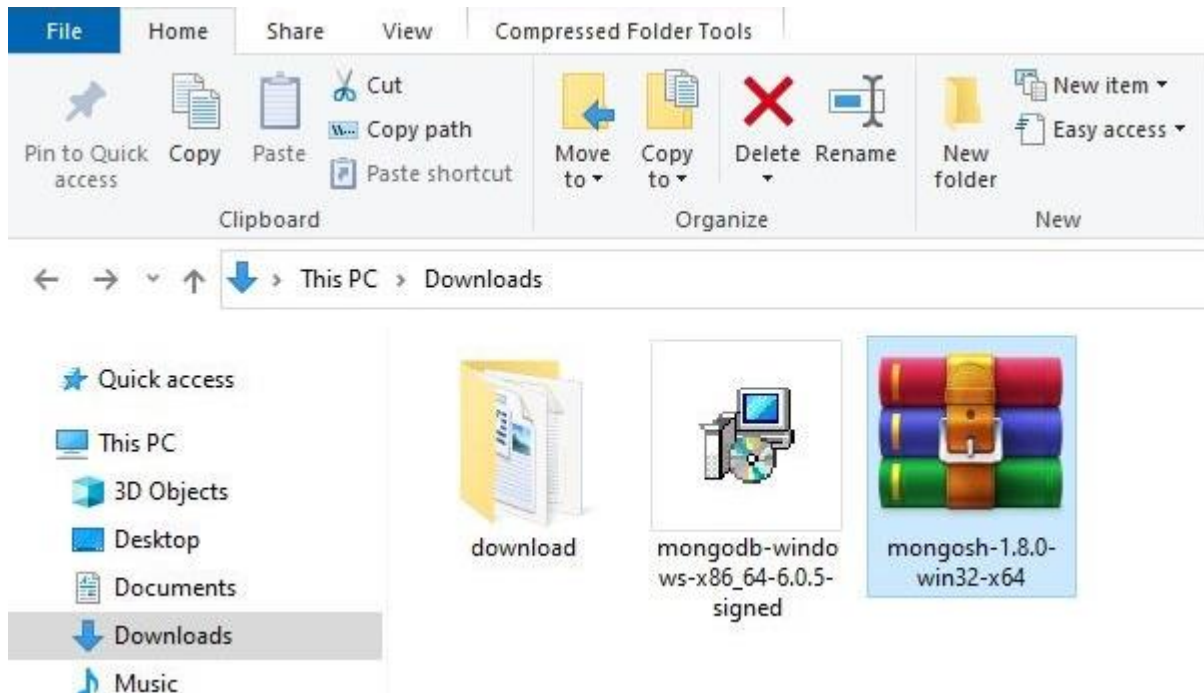
 Copy link

More Options 

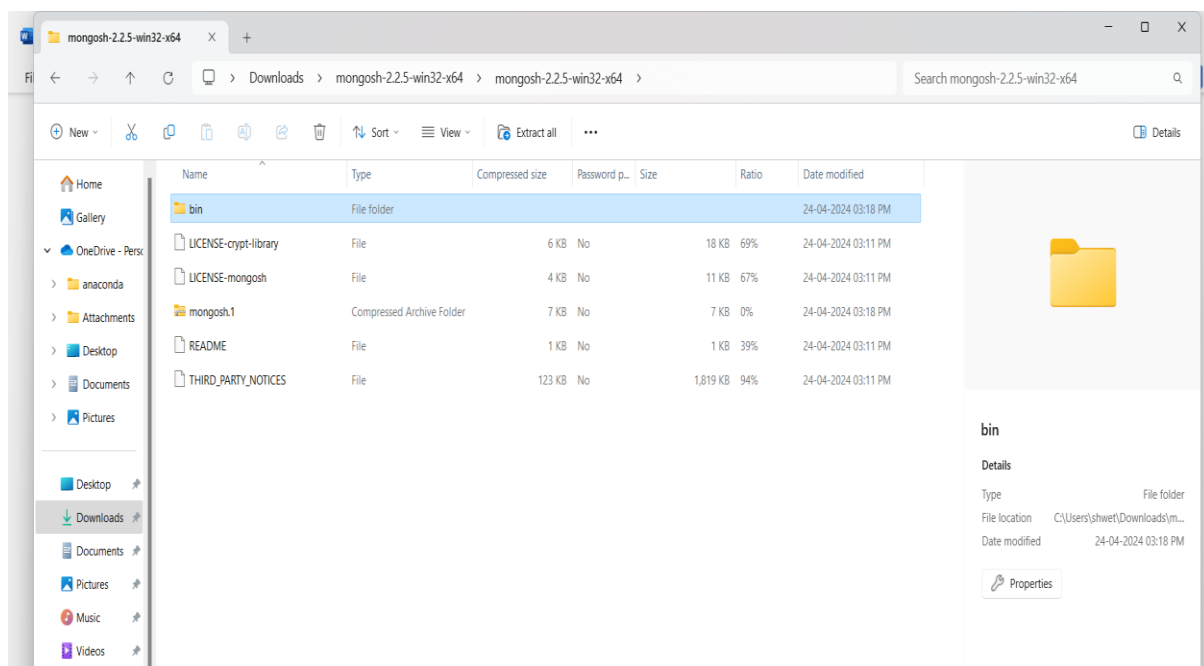
Select any version, Windows, and package according to your requirement. For Windows, we need to choose:

- ✓ Version: 2.2.6
- ✓ OS: Windows x64
- ✓ Package: zip

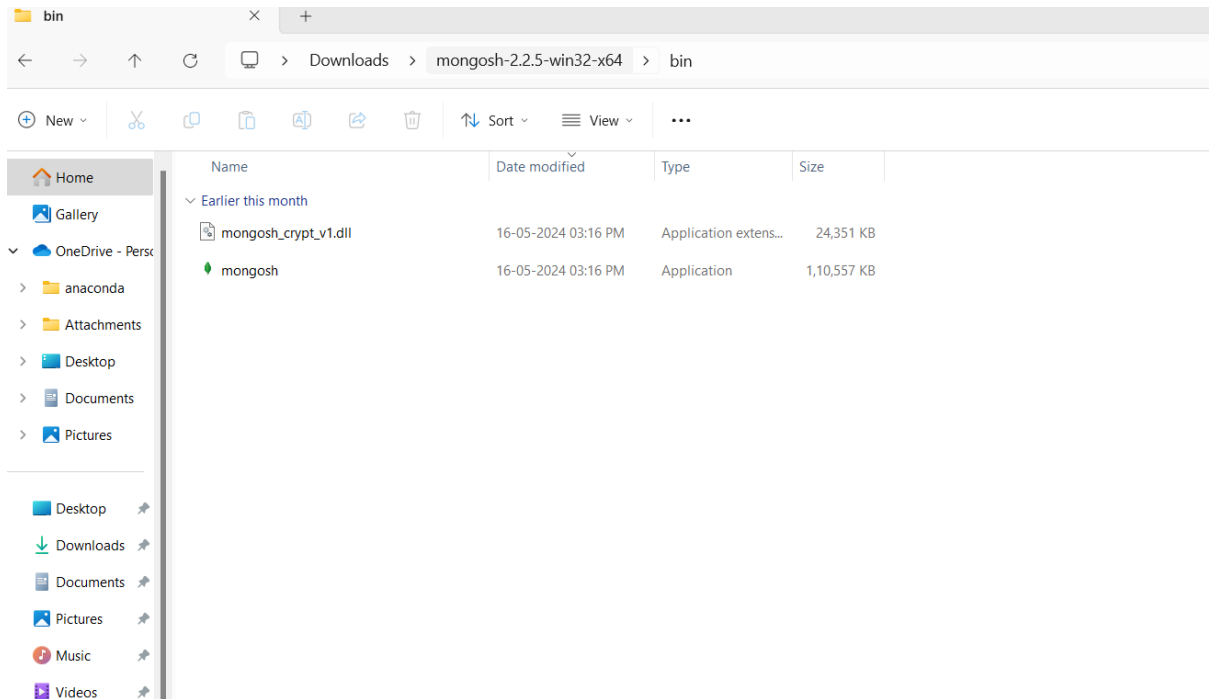
Step2: Locate the downloaded .zip file in your Downloads folder (or wherever you saved it).Right-click on the mongosh-2.2.6-win32-x64 file and select "Extract Here"



Step3: Click on mongosh-2.2.6-win32-x64 file folder and select bin folder.



Step4: Select mongosh application and complete the MongoDB Shell installation process



Step5: Next Terminal Window Will Open. Then Run the command `mongo` to start the shell.

```
mongosh mongodb://127.0.0.1:27020 > mongo
Please enter a MongoDB connection string (Default: mongodb://localhost/): mongo
Current Mongosh Log ID: 6659df0905ac32af1046b798
Connecting to:  mongodb://127.0.0.1:27017/mongo?directConnection=true&serverSelectionTimeoutMS=2000&appName=mongosh+2.2.5
Using MongoDB:  7.0.11
Using Mongosh:  2.2.5
Mongosh 2.2.6 is available for download: https://www.mongodb.com/try/download/shell
For mongosh info see: https://docs.mongodb.com/mongosh-shell/

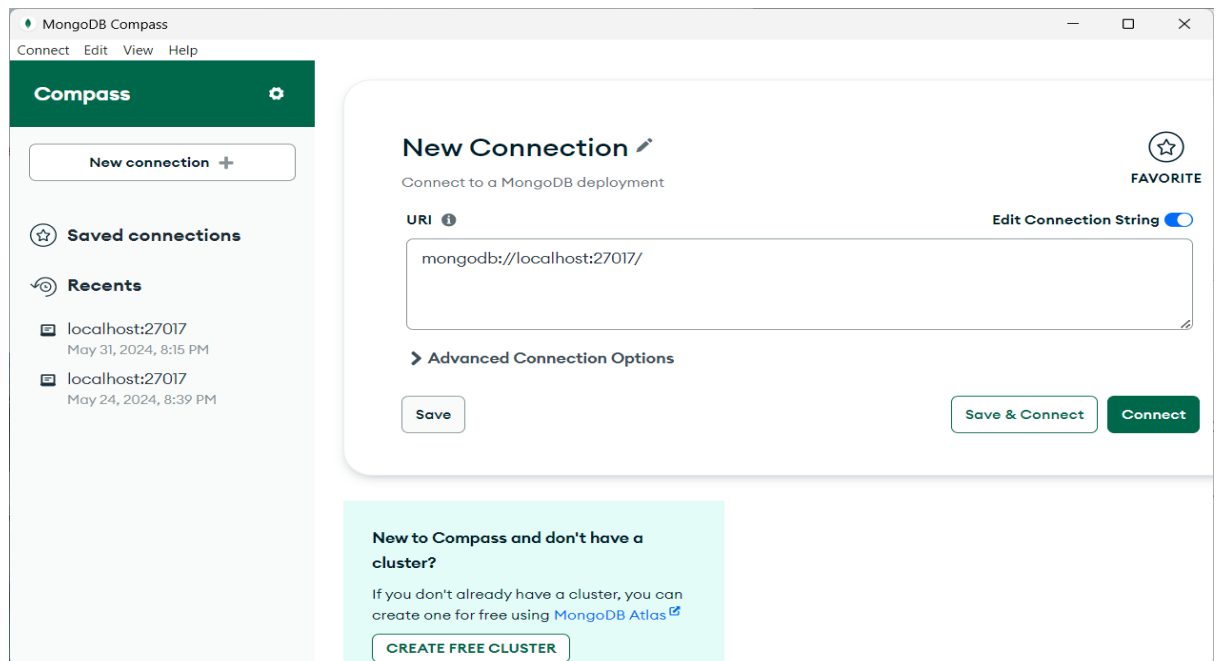
-----
The server generated these startup warnings when booting
2024-05-31T19:03:03.767+05:30: Access control is not enabled for the database. Read and write access to data and configuration is unrestricted
-----

mongo> |
```

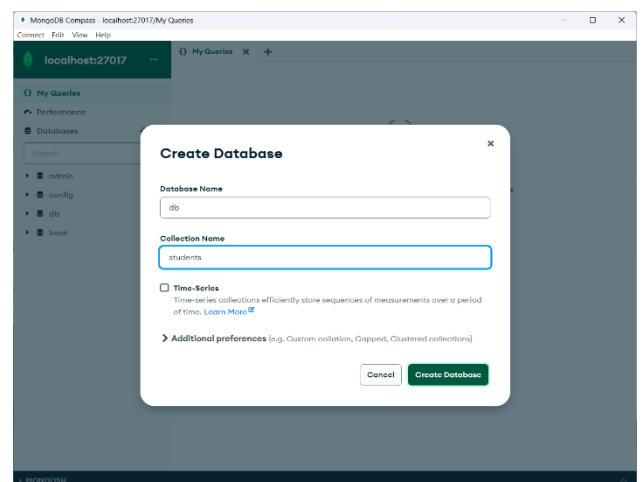
MongoDB Compass:

Connect to MongoDB database

- ✓ Open MongoDB Compass and click on connect button.



- ✓ Select the databases and click on create Database.
 - ✓ Give Database Name and Collection Name to create Database and click on create Database
 - **Database:** A container that holds multiple collections of related data.
- Collection:** Similar to a table in a relational database, a collection stores documents.



How to Import data in MongoDB Compass?

In Compass, it has always been quite easy to import data – from JSON and CSV files

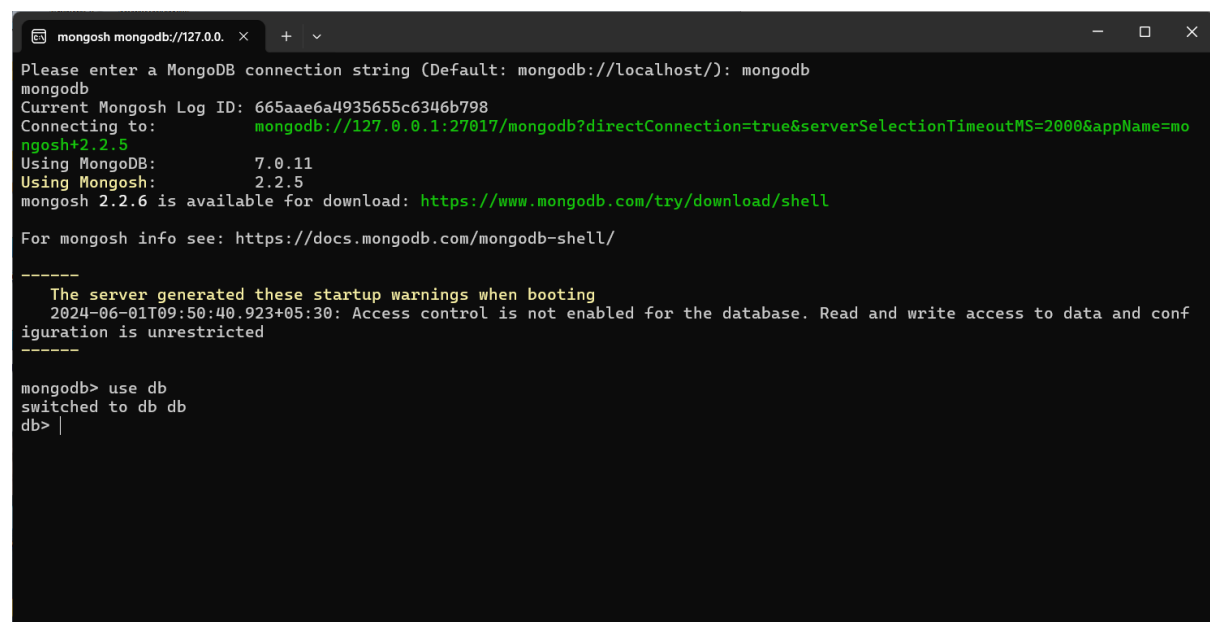
- ✓ Click on Import Button
- ✓ Select the exported JSON or CSV file you want to import.
- ✓ Select the connection names you want to import. Click Import.

After connections, Few commands to test:

Switching Databases:

By default, the `db` points to the "test" database when you start the Mongo shell. To switch to a different database named "db", you can use the `use` command followed by the database name

use db



```
mongosh mongodb://127.0.0.1:27017
Please enter a MongoDB connection string (Default: mongodb://localhost/): mongodb
mongodb
Current Mongosh Log ID: 665aae6a4935655c6346b798
Connecting to:      mongodb://127.0.0.1:27017/mongodb?directConnection=true&serverSelectionTimeoutMS=2000&appName=mongosh+2.2.5
Using MongoDB:      7.0.11
Using Mongosh:       2.2.5
mongosh 2.2.6 is available for download: https://www.mongodb.com/try/download/shell

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

-----
The server generated these startup warnings when booting
2024-06-01T09:50:40.923+05:30: Access control is not enabled for the database. Read and write access to data and configuration is unrestricted
-----

mongodb> use db
switched to db db
db> |
```

Accessing Collections in the Current Database:

The `db` variable acts as a reference point for accessing collections within the current database you're connected to.

`show collections`

```
mongosh mongodb://127.0.0.1:27017/
Please enter a MongoDB connection string (Default: mongodb://localhost/): mongodb
mongodb
Current Mongosh Log ID: 665aae6a4935655c6346b798
Connecting to:   mongodb://127.0.0.1:27017/mongodb?directConnection=true&serverSelectionTimeoutMS=2000&appName=mongosh+2.2.5
Using MongoDB:   7.0.11
Using Mongosh:   2.2.5
mongosh 2.2.6 is available for download: https://www.mongodb.com/try/download/shell
For mongosh info see: https://docs.mongodb.com/mongosh-shell/

-----
The server generated these startup warnings when booting
2024-06-01T09:50:40.923+05:30: Access control is not enabled for the database. Read and write access to data and configuration is unrestricted
-----

mongodb> use db
switched to db db
db> show collections
students
db> |
```

`db.color.insertOne({"color": "red"})` // Insert a record to collection. Create collection if not exist.

```
db> db.color.insertOne({"color": "red"})
{
  acknowledged: true,
  insertedId: ObjectId('6661c03b0b2b725bae46b79a')
}
db> |
```