

Getting Started with MongoDB



Estimated time needed: **30** minutes

Objectives

After completing this lab, you will be able to:

- Access the MongoDB server using the command-line interface
- Describe the process of listing and creating collections, which contain documents and databases, which contain one or more collections
- Perform basic operations on a collection, such as inserting, counting, and listing documents

About Skills Network Cloud IDE

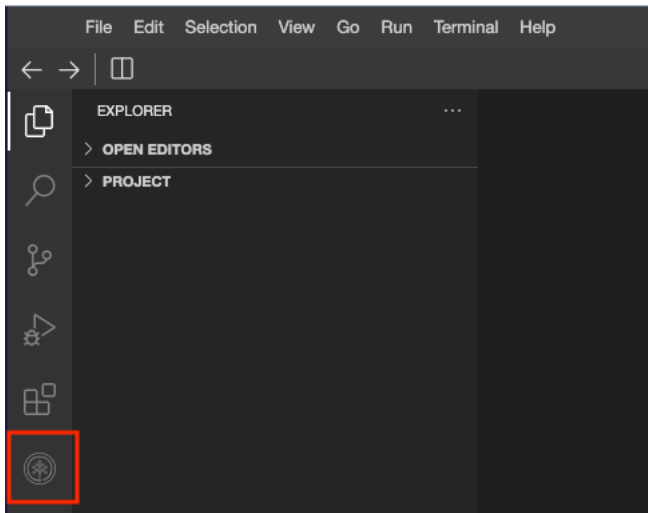
Skills Network Cloud IDE (based on Theia and Docker) provides an environment for hands-on labs for course and project-related labs. Theia is an open-source IDE (Integrated Development Environment) that you can run on a desktop or the cloud. To complete this lab, you will use the Cloud IDE based on Theia and MongoDB running in a Docker container.

Important notice about this lab environment

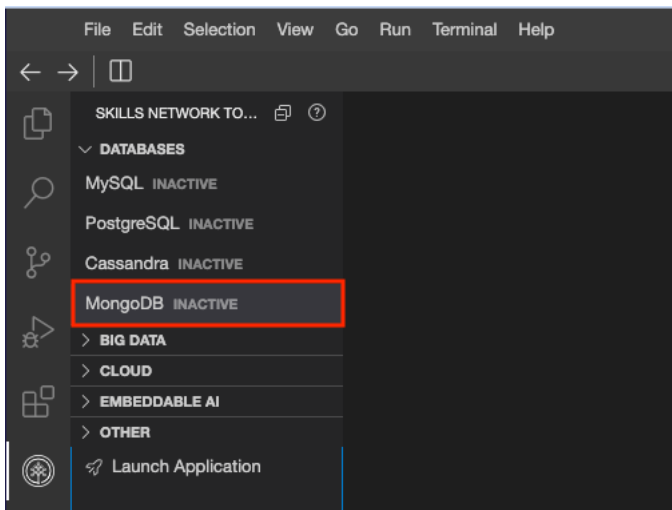
Please be aware that sessions for this lab environment do not persist. You will see a new environment every time you connect to this lab. Any data you may have saved in the earlier session would get lost. Plan to complete these labs in a single session to avoid losing your data.

Set-up: Start MongoDB

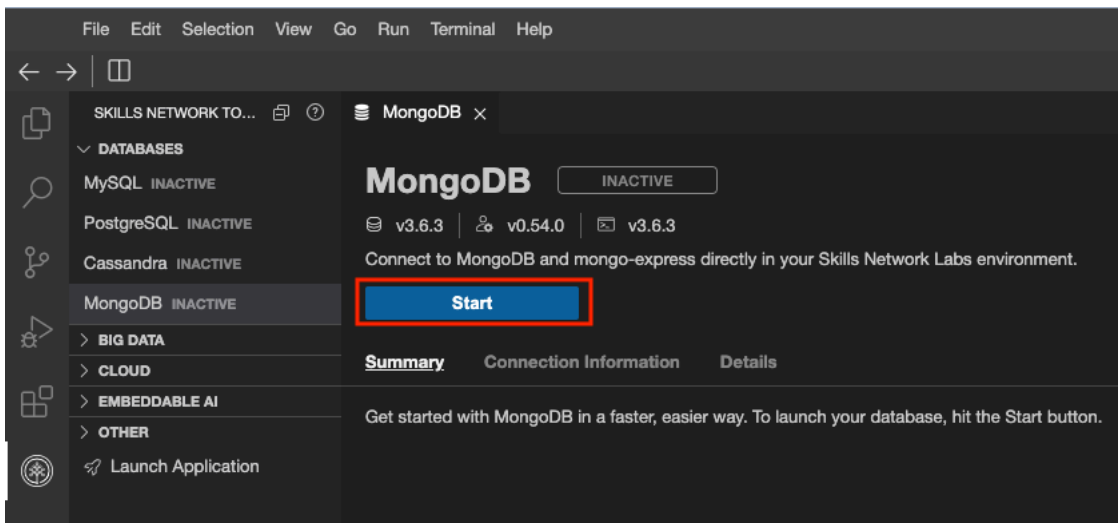
Navigate to Skills Network Toolbox.



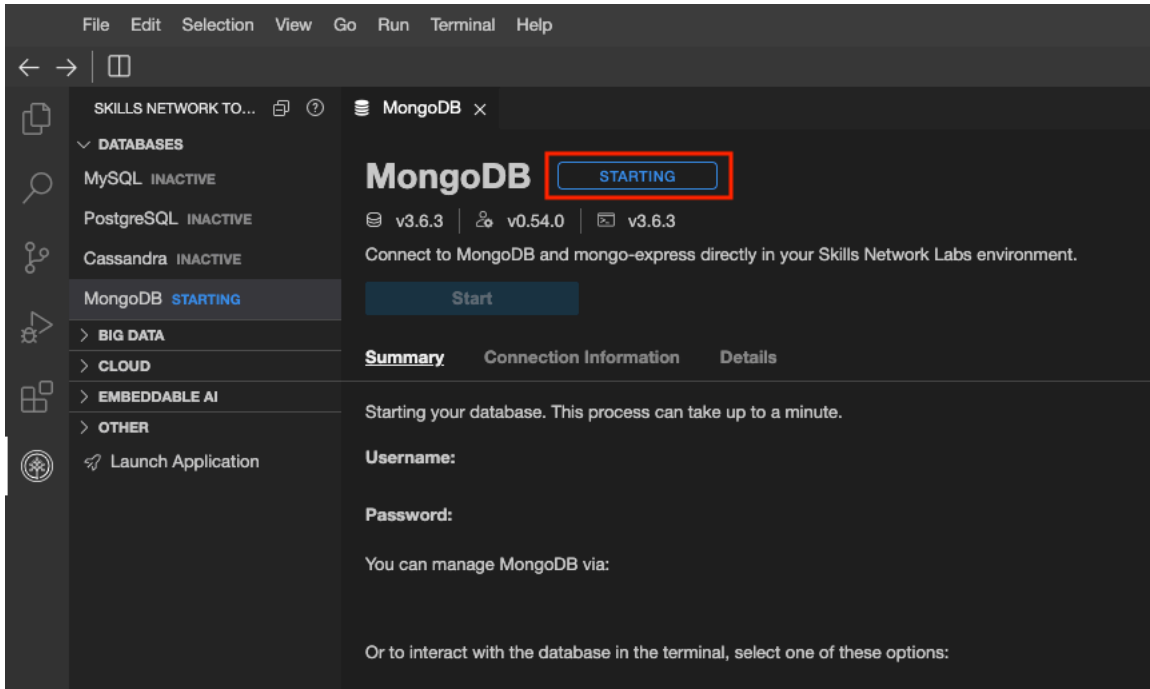
You will notice MongoDB is listed there but inactive. Which means the database is not available for use.



Once you select MongoDB, you will see more details and a place to start it.



Clicking Start will run a background process to configure and start your MongoDB server.



Shortly after that, your server is ready for use. This deployment has access control enabled, and MongoDB enforces authentication. So, take note of the password, as you will need it to log in as the root user.

MongoDB x

MongoDB

ACTIVE

v3.6.3 | v0.54.0 | v3.6.3

Connect to MongoDB and mongo-express directly in your Skills Network Labs environment.

Stop

Summary Connection Information Details

Your database and mongo-express server are now ready to use and available with the following login credentials. For more details on how to navigate MongoDB, please check out the documentation.

Username:

Password:

You can manage MongoDB via:

mongo-express [↗](#)

Or to interact with the database in the terminal, select one of these options:

MongoDB CLI New Terminal

You can now open the terminal and enter details yourself.

File Edit Selection View Go Run Terminal Help

New Terminal Ctrl+Shift+`

Run Task...

Run Build Task

Run Test Task

Rerun Last Task Ctrl+Shift+K

Show Running Tasks...

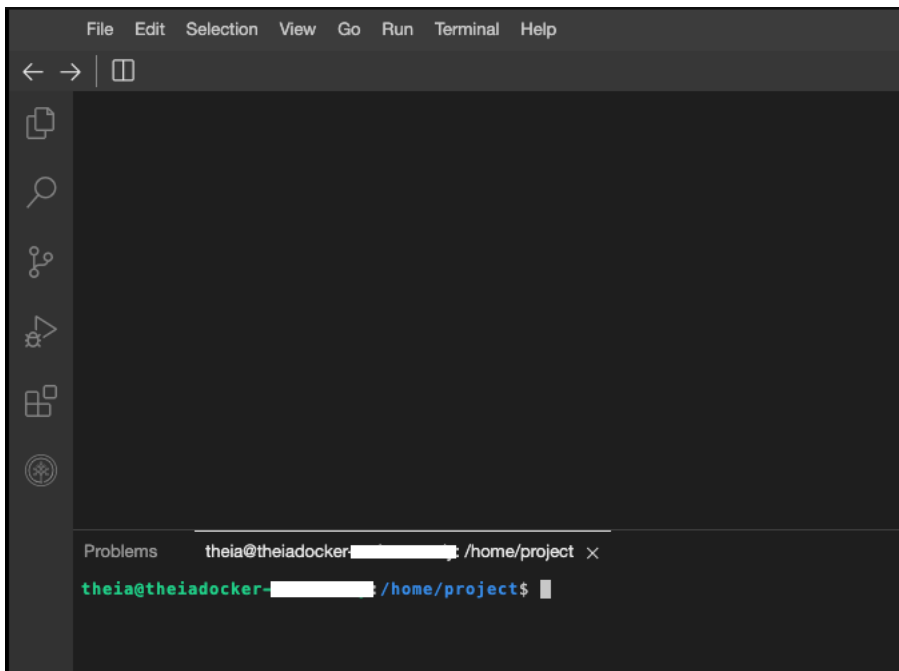
Restart Running Task...

Terminate Task...

Attach Task...

Configure Tasks...

This action will open a new terminal at the end of the screen, as in the following image.



Run the following command on the newly opened terminal. (Copy the code by selecting copy on the right of the code block and then paste it wherever you wish.)

1. 1

1. `mongosh -u root -p PASSWORD --authenticationDatabase admin local`


Copied! Executed!

```
theia@theiadosker- /home/project$ mongosh -u root -p MTC3MDUtbXVoYW1t --authenticationDatabase admin local
Current Mongosh Log ID: 646f9447f39eb3e6e51c6363
Connecting to: mongodb://<credentials>@127.0.0.1:27017/local?directConnection=true&serverSelectionTimeoutMS=2000&authSource=admin&appName=mongosh+1.8.0
Using MongoDB: 3.6.3
Using Mongosh: 1.8.0

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

-----
The server generated these startup warnings when booting
2023-05-25T16:50:00.585+0000:
2023-05-25T16:50:00.585+0000: ** WARNING: Using the XFS filesystem is strongly recommended with the WiredTiger storage engine
2023-05-25T16:50:00.585+0000: ** See http://dochub.mongodb.org/core/prodnotes-filesystem
2023-05-25T16:50:01.480+0000:
2023-05-25T16:50:01.480+0000: ** WARNING: You are running on a NUMA machine.
2023-05-25T16:50:01.480+0000: ** We suggest launching mongod like this to avoid performance problems:
2023-05-25T16:50:01.480+0000: ** numactl --interleave=all mongod [other options]
-----
local>
```

The command contains the username and password to connect to the MongoDB server (the text after the -p option is the password). Your output will be different from the one shown here. Copy the command given to you, or click MongoDB CLI. You will need this command in the next step.

 MongoDB ×

MongoDB

ACTIVE

v3.6.3 | v0.54.0 | v3.6.3

Connect to MongoDB and mongo-express directly in your Skills Network Labs environment.

Stop

Summary

Connection Information

Details

Your database and mongo-express server are now ready to use and available with the following login credentials. For more details on how to navigate MongoDB, please check out the documentation.

Username:

Password:

MjIzOTEtYXVhYm91t

You can manage MongoDB via:

mongo-express

Or to interact with the database in the terminal, select one of these options:

MongoDB CLI

New Terminal

Exercise 1: Find the version of the server

On the Mongo client, run the following command.

```
1. 1
1. db.version()
```

Copied!

This code will show the version of the MongoDB server.

Exercise 2: List databases

On the Mongo client, run the following command.

```
1. 1
1. show dbs
```

Copied!

This command will print a list of the databases present on the server, including default and user-defined.

Exercise 3: Create database

On the Mongo client, run the following command.

```
1. 1
1. use training
```

Copied!

This command will switch the context to the database named `training`. If the database `training` doesn't exist, MongoDB will create it for you when you insert data.

Exercise 4: Create collection

On the Mongo client, run the following command.

```
1. 1
1. db.createCollection("mycollection")
```

Copied!

This command will create a collection name `mycollection` inside the `training` database.

Exercise 5: List collections

On the Mongo client, run the following command.

```
1. 1
1. show collections
```

Copied!

This command will print the list of collections in your current database.

Exercise 6: Insert documents into a collection

On the Mongo client, run the following command.

```
1. 1
1. db.mycollection.insert({"color":"white","example":"milk"})
```

Copied!

The above command inserts the json document `{"color":"white","example":"milk"}` into the collection.

Let us insert one more document.

```
1. 1
1. db.mycollection.insert({"color":"blue","example":"sky"})
```

Copied!

The previous command inserts the JSON document `{"color":"blue","example":"sky"}` into the collection.

Insert three more documents of your choice.

Exercise 7: Count the number of documents in a collection

On the Mongo client, run the following command.

```
1. 1
1. db.mycollection.countDocuments()
```

Copied!

This command gives you the number of documents in the collection.

Exercise 8: List all documents in a collection

On the Mongo client, run the following command.

```
1. 1
1. db.mycollection.find()
```

Copied!

This command lists all the documents in the collection **mycollection**

Notice that MongoDB automatically adds an `_id` field to every document to identify the document.

Exercise 9: Disconnect from MongoDB server

On the Mongo client, run the following command.

```
1. 1
1. exit
```

Copied!

Practice exercises

1. Problem:

Connect to mongodb server.

▼ Click here for hint

Use the `mongosh` command with correct username and password.

▼ Click here for solution

Use the below command with the user name `'root'` and password generated earlier.

```
1. 1
1. mongosh -u root -p Ntc0My1yc2FubmFy --authenticationDatabase admin local
```

Copied!

2. Problem:

List databases.

▼ Click here for hint

Use the `show` command with `db`s option.

▼ Click here for solution

- 1
1. `show dbs`

Copied!

3. Problem:

Create a database named `mydatabase`.

▼ Click here for hint

Use the `use` command with the database name.

▼ Click here for solution

- 1
1. `use mydatabase`

Copied!

4. Problem:

Create a collection named `Landmarks` in the database `mydatabase`.

▼ Click here for hint

Use the `createCollection` command.

▼ Click here for solution

- 1
1. `db.createCollection("landmarks")`

Copied!

5. Problem:

List collections

▼ Click here for hint

Use the `show` command with `collections` option.

▼ Click here for solution

- 1
1. `show collections`

Copied!

6. Problem:

Insert details of five landmarks, including name, city, and country. Example: `Eiffel Tower, Paris, France`.

▼ Click here for hint

Use the `db.collection.insert()` command with the correct options.

▼ Click here for solution

- 1
 - 2
 - 3
 - 4
 - 5
1. `db.landmarks.insert({"name":"Statue of Liberty","city":"New York","country":"USA"})`
 2. `db.landmarks.insert({"name":"Big Ben","city":"London","country":"UK"})`
 3. `db.landmarks.insert({"name":"Taj Mahal","city":"Agra","country":"India"})`
 4. `db.landmarks.insert({"name":"Pyramids","country":"Egypt"})`
 5. `db.landmarks.insert({"name":"Great Wall of China","country":"China"})`

Copied!

7. Problem:

Count the number of documents you have inserted.

▼ Click here for hint

Use the `countDocuments` command on your collections.

▼ Click here for solution

1. 1

1. `db.landmarks.countDocuments()`

Copied!

8. Problem:

List the documents.

▼ Click here for hint

Use the `db.collection.find()` command.

▼ Click here for solution

1. 1

1. `db.landmarks.find()`

Copied!

9. Problem:

Disconnect from the server.

▼ Click here for hint

Use the `exit` command.

▼ Click here for solution

1. 1

1. `exit`

Copied!

Summary

In this lab, you have gained an understanding of basic commands to interact with MongoDB by performing Insert and Read operations.

Author(s)

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