Table Operations

Estimated time needed: **10** minutes

Objectives

After completing this lab, you will be able to:

- Create a table in a keyspace by defining a column name and data type
- Extract the details of a table with the DESCRIBE command
- Alter a table by adding columns
- Drop a table by removing it from the keyspace

About This SN Labs Cloud IDE

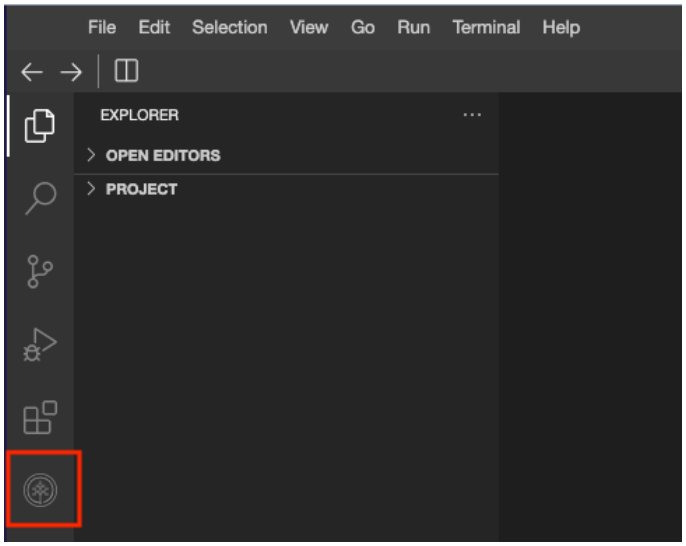
This Skills Network Labs Cloud IDE provides a hands-on environment for course and project-related labs. It utilizes Theia, an open-source IDE (Integrated Development Environment) platform that can be run on a desktop or the cloud. To complete this lab, we will be using the Cloud IDE based on Theia and Cassandra running in a Docker container.

Important Notice about this lab environment

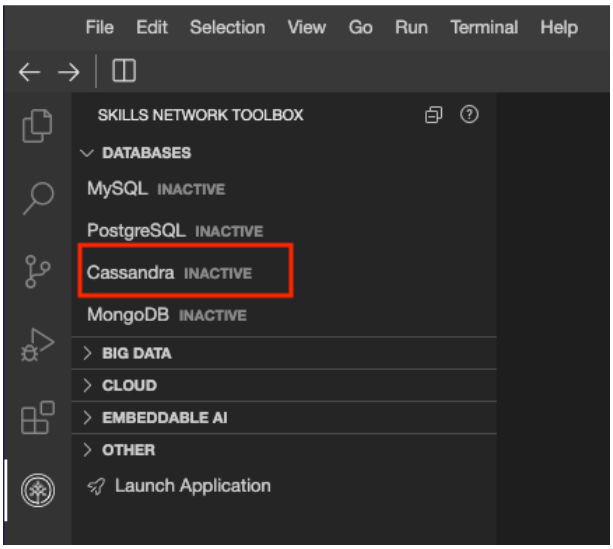
Please be aware that sessions for this lab environment are not persisted. Every time you connect to this lab, a new environment is created for you. Any data you may have saved in the earlier session would get lost. Plan to complete these labs in a single session to avoid losing your data.

Set-up: Start Cassandra

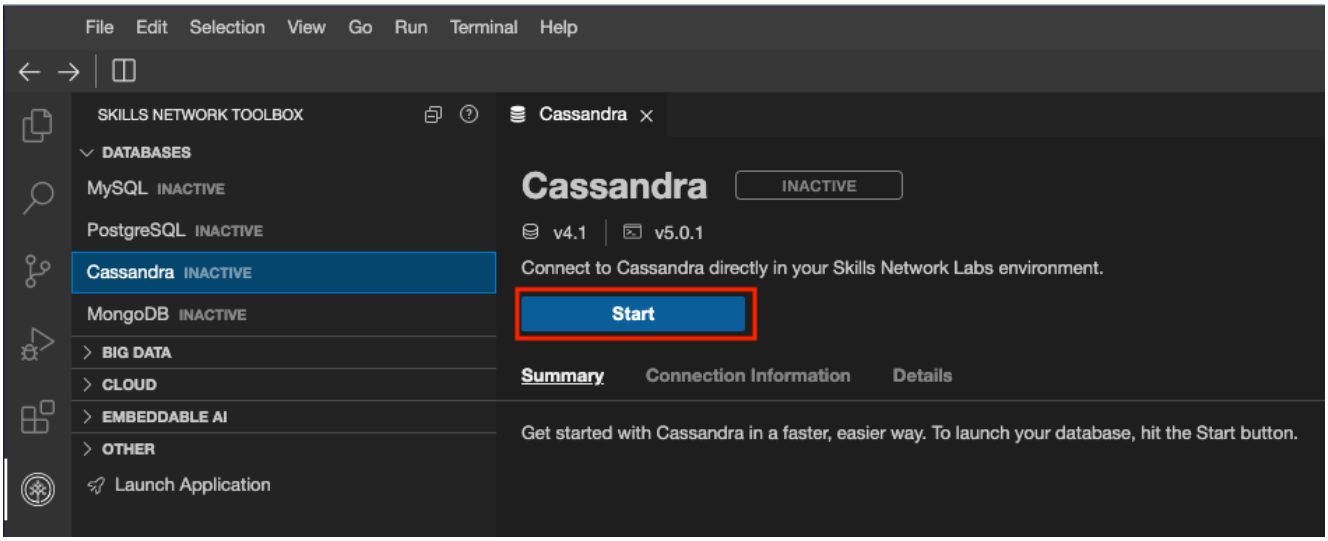
Navigate to Skills Network Toolbox.



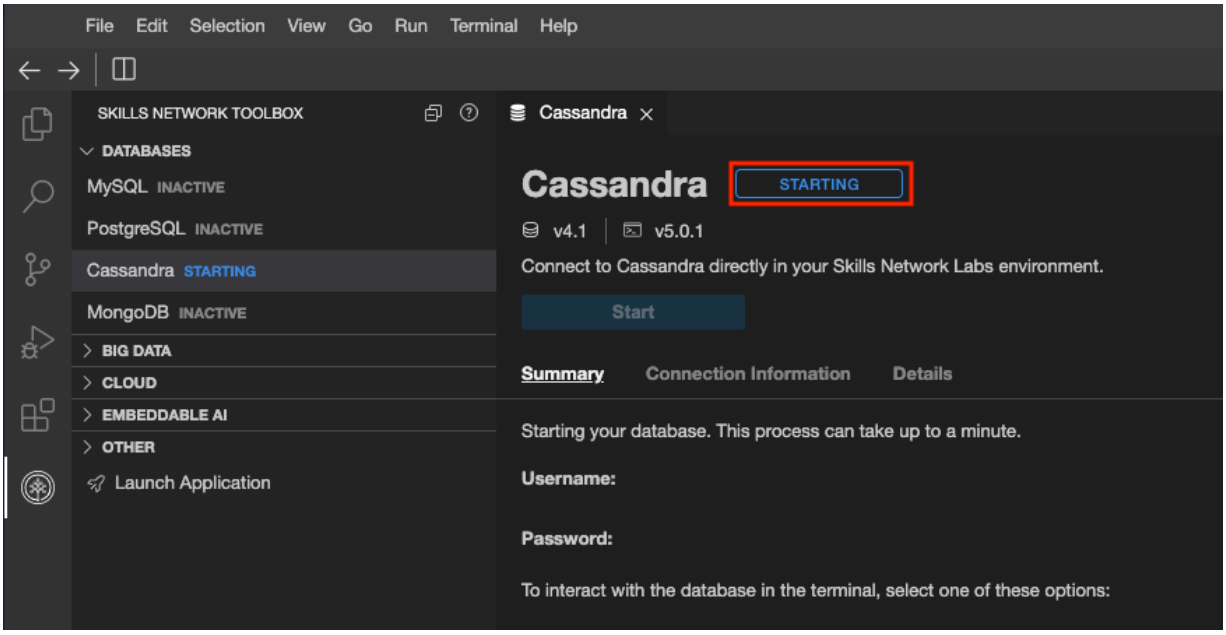
You will notice Cassandra listed there, but inactive. Which means the database is not available to use.



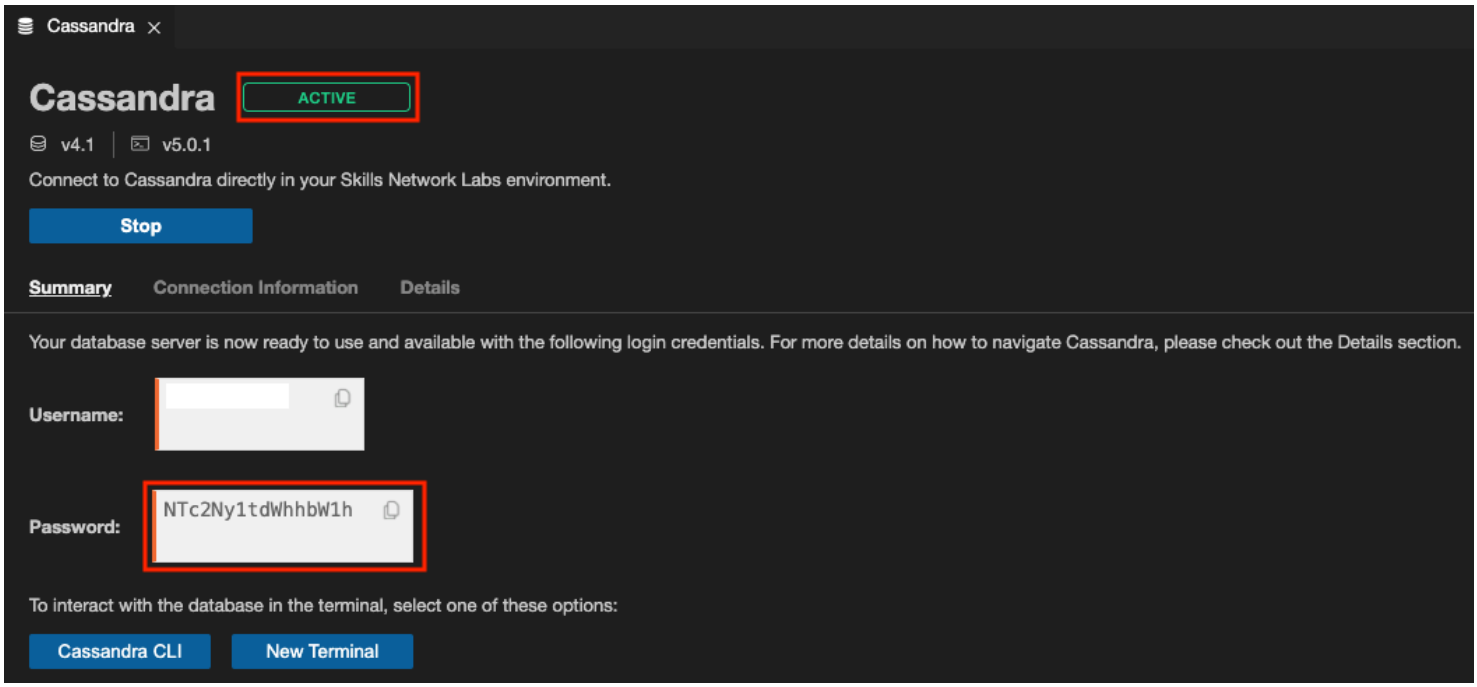
Once you click on it, you will see more details about it and a button to start it.



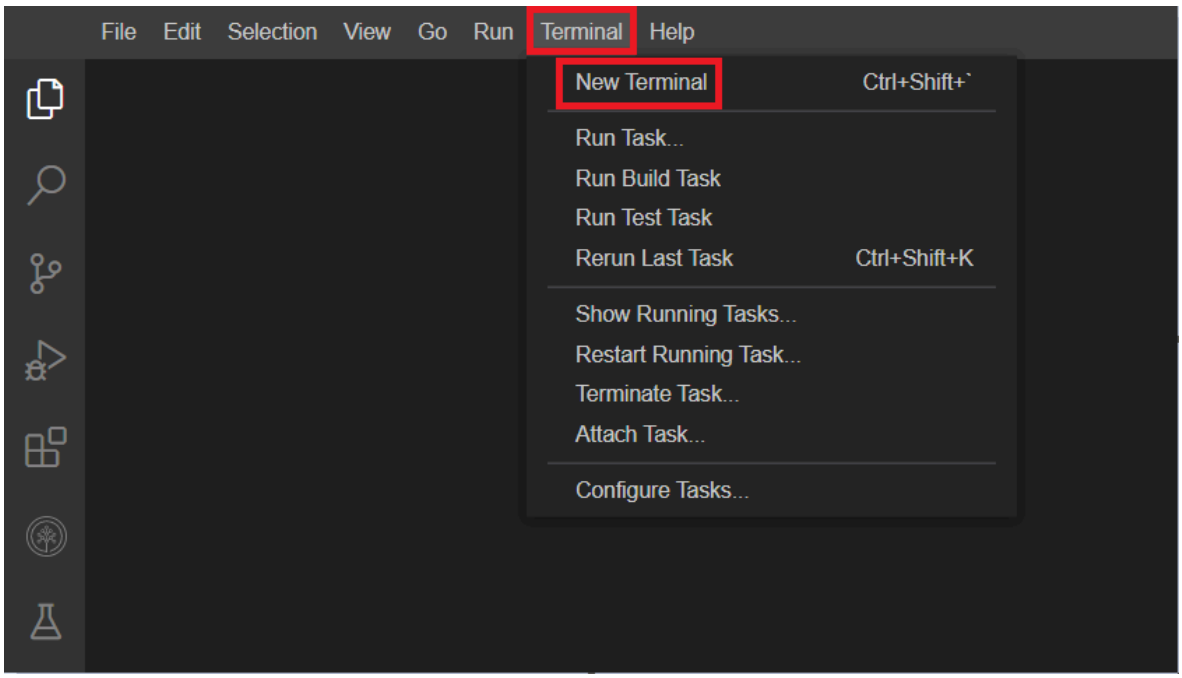
Clicking on the start button will run a background process to configure and start your Cassandra server.



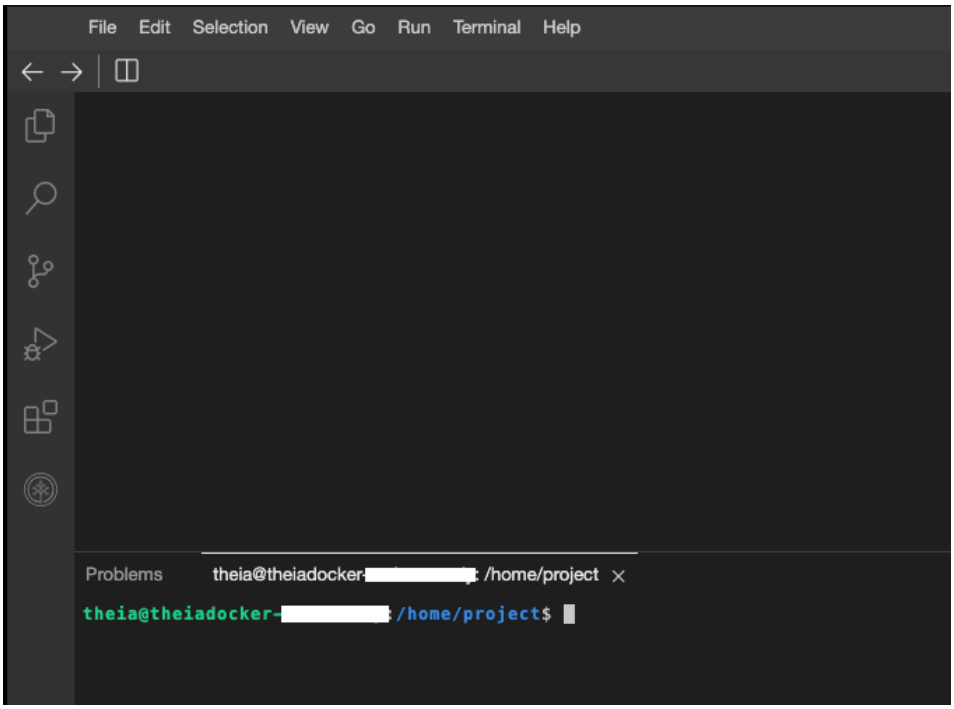
Shortly after that, your server is ready for use. This deployment has access control enabled and Cassandra enforces authentication. So, take note of the password as you will need it to login as `cassandra` user.



You can now either open terminal and enter details yourself.



This will open a new terminal at the bottom of the screen as in the image below.

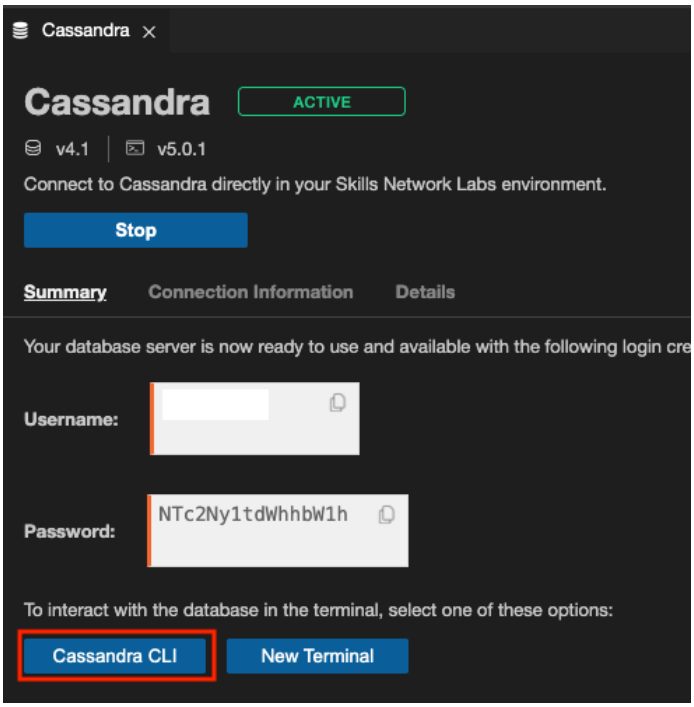


Run the below command on the newly opened terminal. (You can copy the code by clicking on the little copy button on the bottom right of the codeblock below and then paste it, wherever you wish)

```
cqlsh --username cassandra --password PASSWORD
```

The command contains the username and password to connect to Cassanrda server. Your output could be different from the one shown above. Copy the command given to you, and keep it handy. You will need it in the next step.

Or you can simply click on Cassandra CLI which does that for you.



Exercise 1 - Create Keyspace

Create a keyspace named `training` using `SimpleStrategy` and `replication factor` of `3`.

▶ Click here for Hint
▼ Click here for Solution
On the cqlsh run the below command.

```
CREATE KEYSPACE training
WITH replication = {'class':'SimpleStrategy', 'replication_factor' : 3};
```

Exercise 2 - Create a table

The below command creates a table named `movies`, in the `training` keyspace.
The `movies` table has three columns:

- `movie_id` is an integer and is the primary key.
- `movie_name` is a text column.
- `year_of_release` is an integer.

On the cassandra client run the below command.

```
use training;
CREATE TABLE movies(
movie_id int PRIMARY KEY,
movie_name text,
year_of_release int
);
```

Verify that the table got created by listing all tables.

```
describe tables;
```

Exercise 3 - Describe a table

In the previous exercise you created a table named `movies`.

Let us print more details of it using the describe command.

Describe the table.

```
describe movies
```

Exercise 4 - Alter a table

In a previous exercise you created a table named `movies`.
Let's modify it by adding a column named 'genre' which is of type 'text.'

Alter the table.

```
ALTER TABLE movies
ADD genre text;
```

Verify the changes using the below command

```
describe movies;
```

Exercise 5 - Drop a table

To drop the `movies` table run the below command.

```
drop table movies;
```

Verify using the below command. You should get an error.

```
describe movies;
```

Practice exercises

1. Problem: Create a table named `books` with 3 columns; 'book_id' which is the primary key and of `integer` type, 'author' which is of type `text` and 'title' which is of type `text`.

   ▶ Click here for Hint
   ▼ Click here for Solution

   On the cqlsh run the below command.

   ```
   CREATE TABLE books (
   book_id int PRIMARY KEY,
   author text,
   title text
   );
   ```

2. Problem: Add a column `date_of_publication` which is of `date` type.

   ▶ Click here for Hint
   ▼ Click here for Solution

   On the cqlsh run the below command.

   ```
   ALTER TABLE books
   add date_of_publication date;
   ```

3. Problem: Add a column `price` which is of type `decimal`.

   ▶ Click here for Hint
   ▼ Click here for Solution

   On the cqlsh run the below command.

   ```
   ALTER TABLE books
   add price decimal;
   ```

4. Problem: Drop the column `price` from the `books` table.

   ▶ Click here for Hint

▼ Click here for Solution

On the cqlsh run the below command.

```
ALTER TABLE books
drop price;
```

5. Problem: Drop the `books` table.

▶ Click here for Hint
▼ Click here for Solution

On the cqlsh run the below command.

```
DROP TABLE books;
```

6. Problem: Drop the `training` keyspace.

▶ Click here for Hint
▼ Click here for Solution

On the cqlsh run the below command.

```
drop keyspace training;
```

Summary

In this lab, you have gained an understanding of table oepration in Cassandra.

Author(s)

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