

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

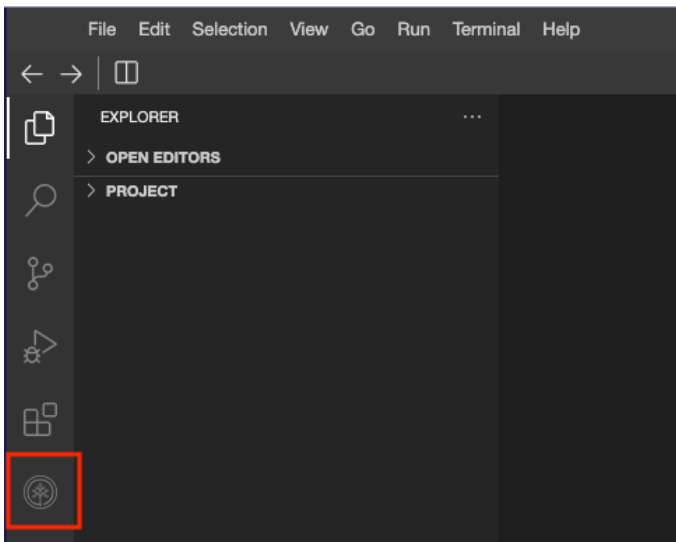
This Skills Network Labs Cloud IDE provides a hands-on environment for course and project-related labs. It utilizes Theia, an open-source IDE (Integrated Development Environment) platform that can be run on a desktop or the cloud. To complete this lab, we will be using the Cloud IDE based on Theia and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

Important Notice about this lab environment

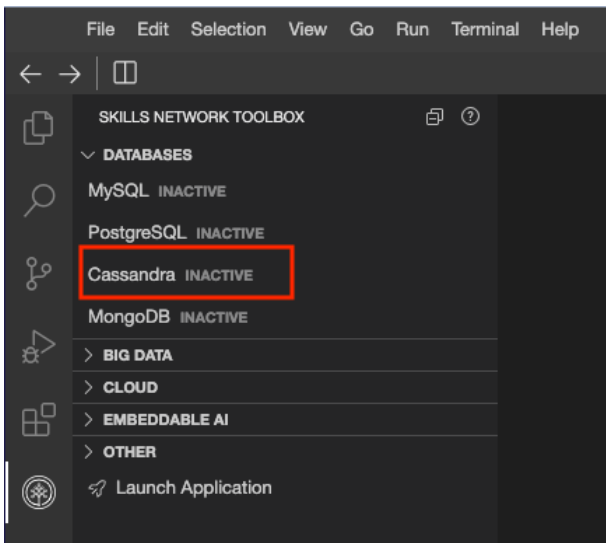
Please be aware that sessions for this lab environment are not persisted. Every time you connect to this lab, a new environment is created for you. Any data you may have saved in the earlier session would get lost. Plan to complete these labs in a single session to avoid losing your data.

Set-up: Start Cassandra

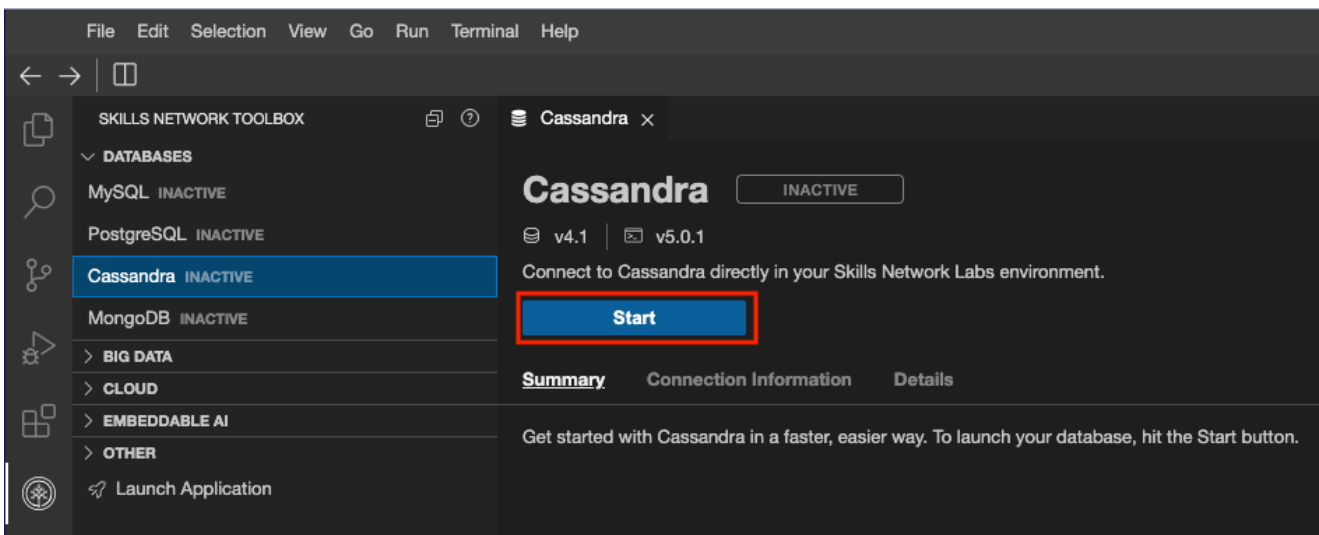
Navigate to Skills Network Toolbox.



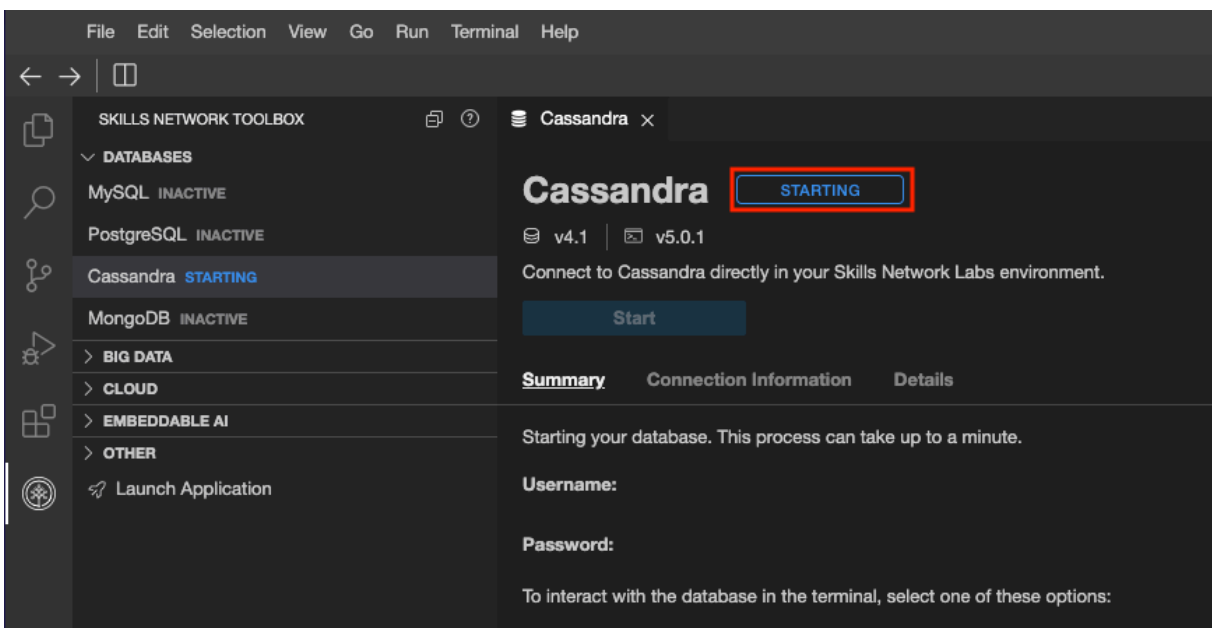
You will notice Cassandra listed there, but inactive. Which means the database is not available to use.



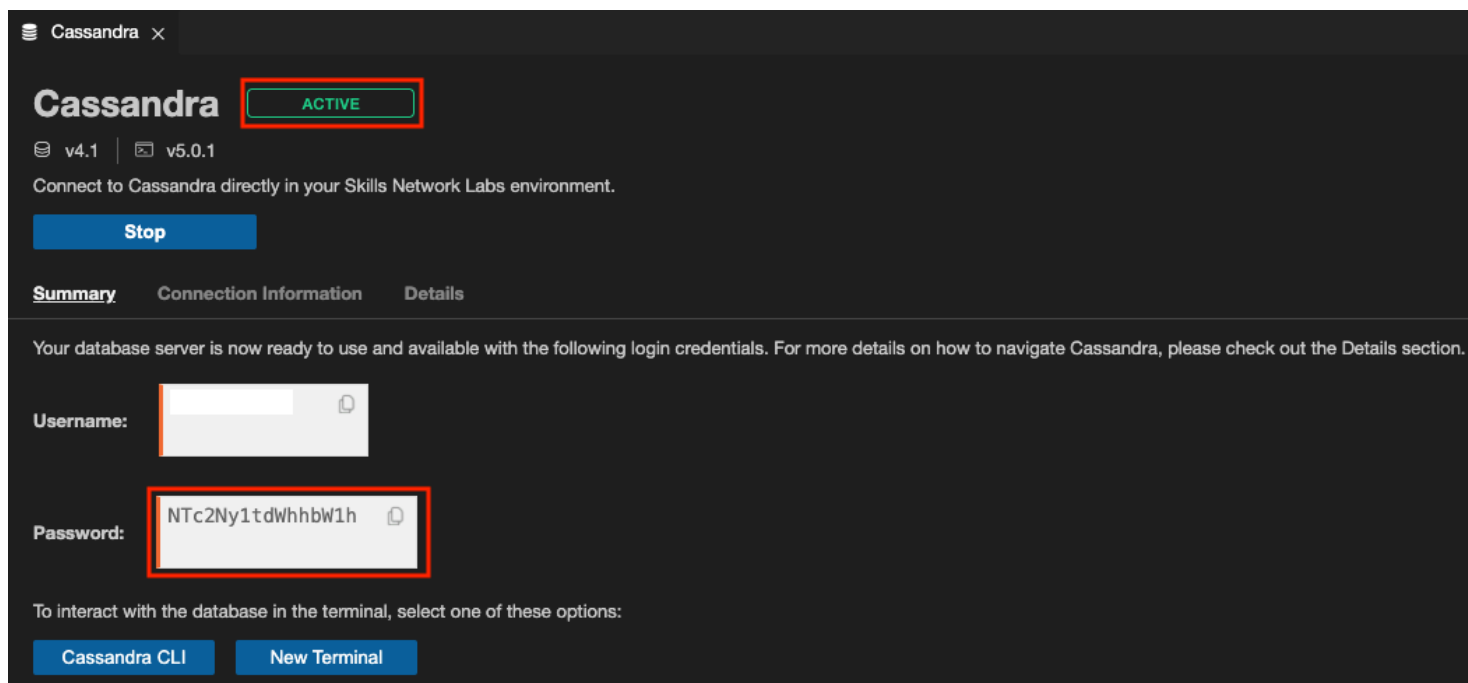
Once you click on it, you will see more details about it and a button to start it.



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

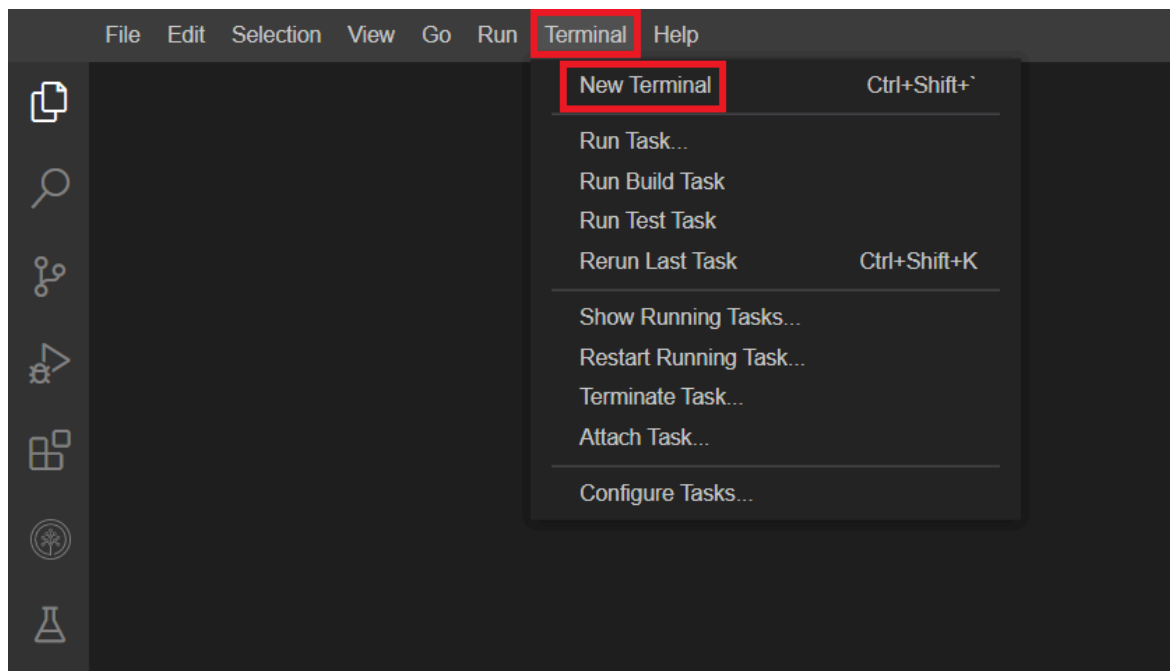


Shortly after that, your server is ready for use. This deployment has access control enabled and Cassandra enforces authentication. So, take note of the password as you will need it to login as cassandra user.



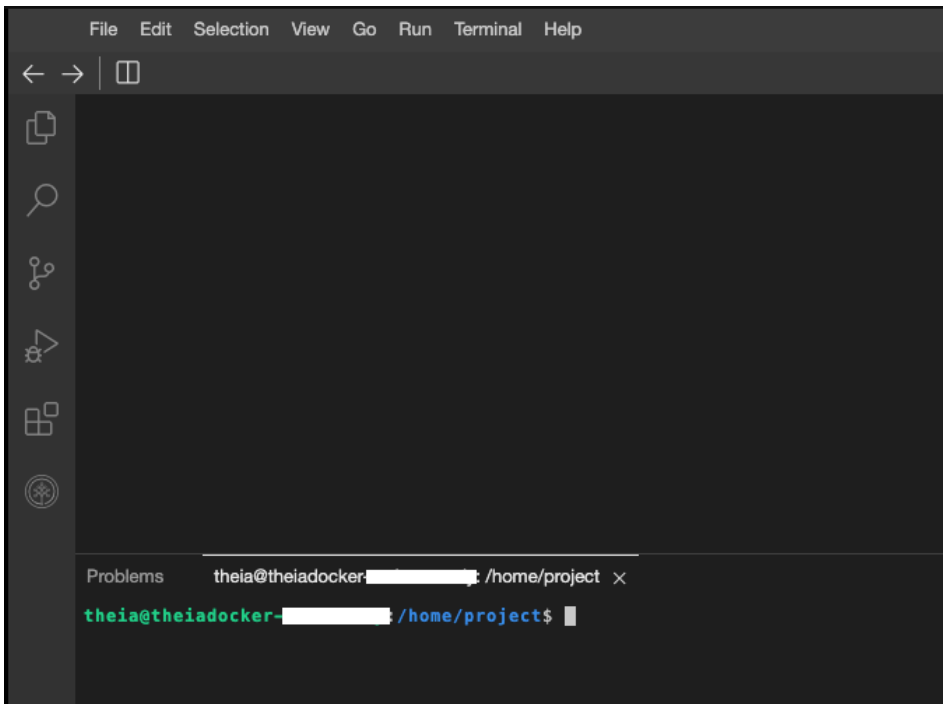
The screenshot shows the Cassandra Skills Network Labs interface. At the top, there's a tab labeled 'Cassandra' with a close button. Below it, the word 'Cassandra' is displayed in large white text, followed by a green 'ACTIVE' button. Underneath, it shows 'v4.1' and 'v5.0.1' versions. A message states: 'Connect to Cassandra directly in your Skills Network Labs environment.' Below this is a blue 'Stop' button. A navigation bar contains 'Summary', 'Connection Information', and 'Details'. The 'Summary' section is active, displaying: 'Your database server is now ready to use and available with the following login credentials. For more details on how to navigate Cassandra, please check out the Details section.' It lists 'Username:' with a redacted field and 'Password:' with the value 'NTc2Ny1tdWhhbW1h' (highlighted with a red box). At the bottom, it says 'To interact with the database in the terminal, select one of these options:' with two buttons: 'Cassandra CLI' and 'New Terminal'.

You can now either open terminal and enter details yourself.



The screenshot shows the VS Code interface with the 'Terminal' menu open. The menu is highlighted with a red box. The 'New Terminal' option is also highlighted with a red box. The menu includes options like 'Run Task...', 'Run Build Task', 'Run Test Task', 'Rerun Last Task', 'Show Running Tasks...', 'Restart Running Task...', 'Terminate Task...', 'Attach Task...', and 'Configure Tasks...'. The 'Ctrl+Shift+' shortcut is shown next to 'New Terminal', and 'Ctrl+Shift+K' is shown next to 'Rerun Last Task'.

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



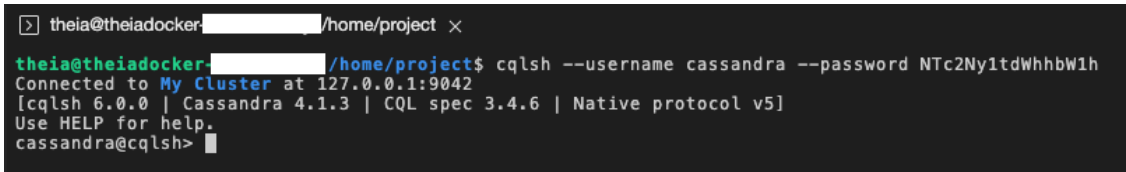
Run the below command on the newly opened terminal. (You can copy the code by clicking on the little copy button on the bottom right of the codeblock below and then paste it, wherever you wish)

1. 1

1. `cqlsh --username cassandra --password PASSWORD`

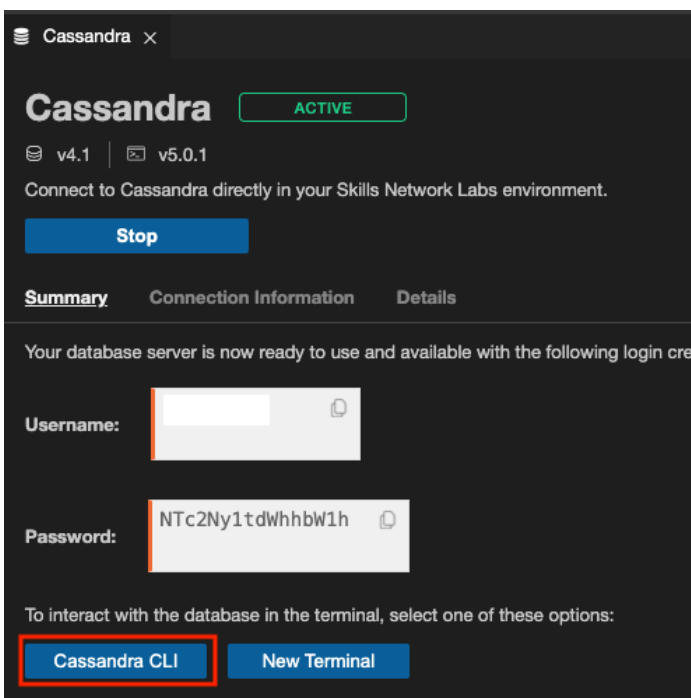
Copied!

Executed!



The command contains the username and password to connect to Cassandra 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](#)

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.

```
1. 1
2. 2
3. 3
4. 4
5. 5
6. 6

1. use training;
2. CREATE TABLE movies(
3. movie_id int PRIMARY KEY,
4. movie_name text,
5. year_of_release int
6. );
```

Copied!

Verify that the table got created by listing all tables.

```
1. 1

1. describe tables;
```

Copied!

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.

```
1. 1

1. describe movies
```

Copied!

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.

```
1. 1
2. 2

1. ALTER TABLE movies
2. ADD genre text;
```

Copied!

Verify the changes using the below command

```
1. 1

1. describe movies;
```

Copied!

Exercise 5 - Drop a table

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

```
1. 1
1. drop table movies;
```

Copied!

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

```
1. 1
1. describe movies;
```

Copied!

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
2. Problem: Add a column `date_of_publication` which is of date type.
 - ▶ Click here for Hint
 - ▶ Click here for Solution
3. Problem: Add a column `price` which is of type decimal.
 - ▶ Click here for Hint
 - ▶ Click here for Solution
4. Problem: Drop the column `price` from the `books` table.
 - ▶ Click here for Hint
 - ▶ Click here for Solution
5. Problem: Drop the `books` table.
 - ▶ Click here for Hint
 - ▶ Click here for Solution
6. Problem: Drop the `training` keyspace.
 - ▶ Click here for Hint
 - ▶ Click here for Solution

Summary

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

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