

Cassandra Keyspace Operations



Estimated time needed: **15** minutes

Objectives

After completing this lab you will be able to:

- Create, update and remove a keyspace in Cassandra
- Identify the keyspace for the current session with the USE command
- Describe a keyspace by listing all the tables in it

About This SN Labs Cloud IDE

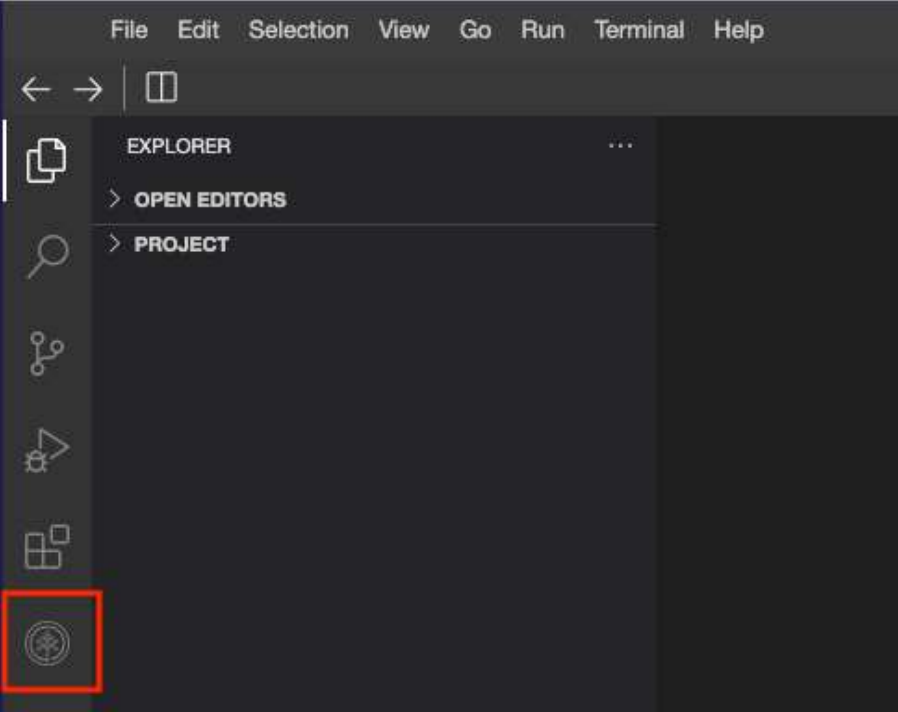
This Skills Network Labs Cloud IDE provides a hands-on environment for course and project related labs. It utilizes Theia, an open-source IDE (Integrated Development Environment) platform, that can be run on desktop or on the cloud. To complete this lab, we will be using the Cloud IDE based on Theia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

Important Notice about this lab environment

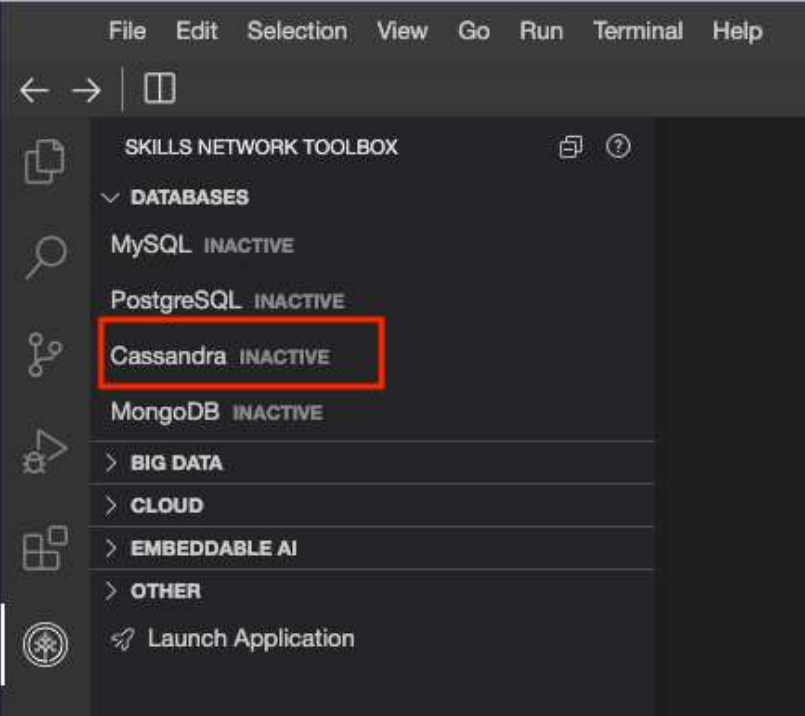
Please be aware that sessions for this lab environment are not persisted. Every time you connect to this lab, a new environment is created for you. Any data you may have saved in the earlier session would get lost. Plan to complete these labs in a single session, to avoid losing your data.

Set-up: Start Cassandra

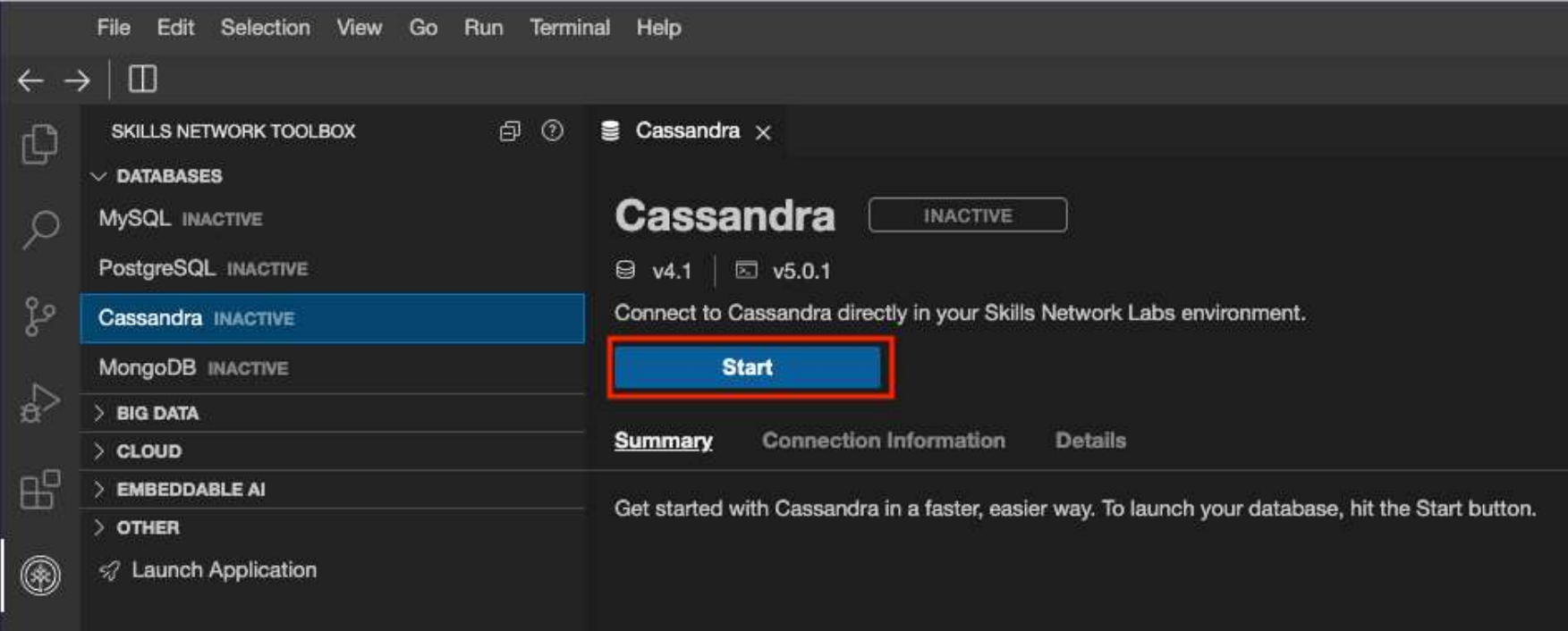
Navigate to Skills Network Toolbox.



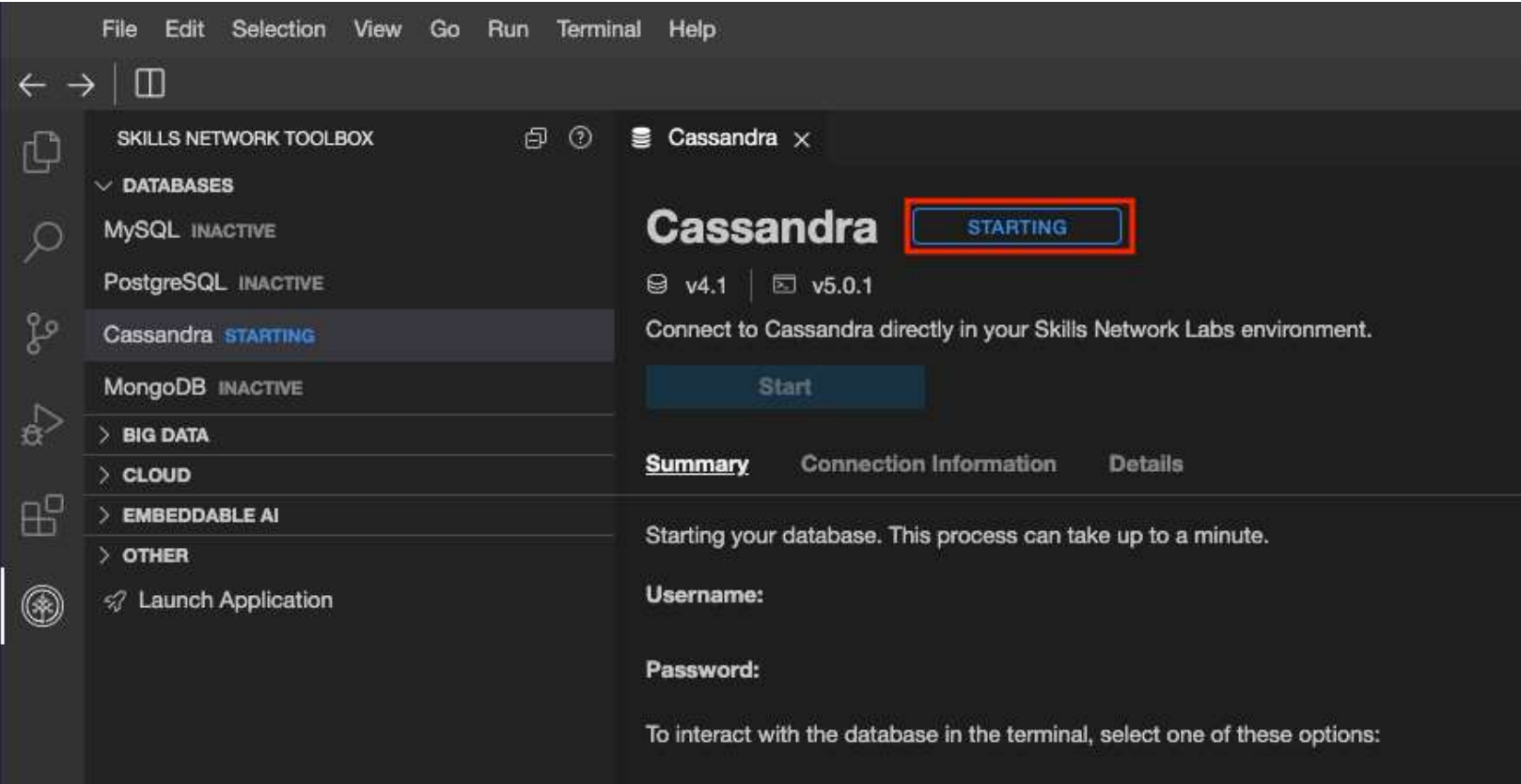
You will notice Cassandra listed there, but inactive. Which means the database is not available to use.



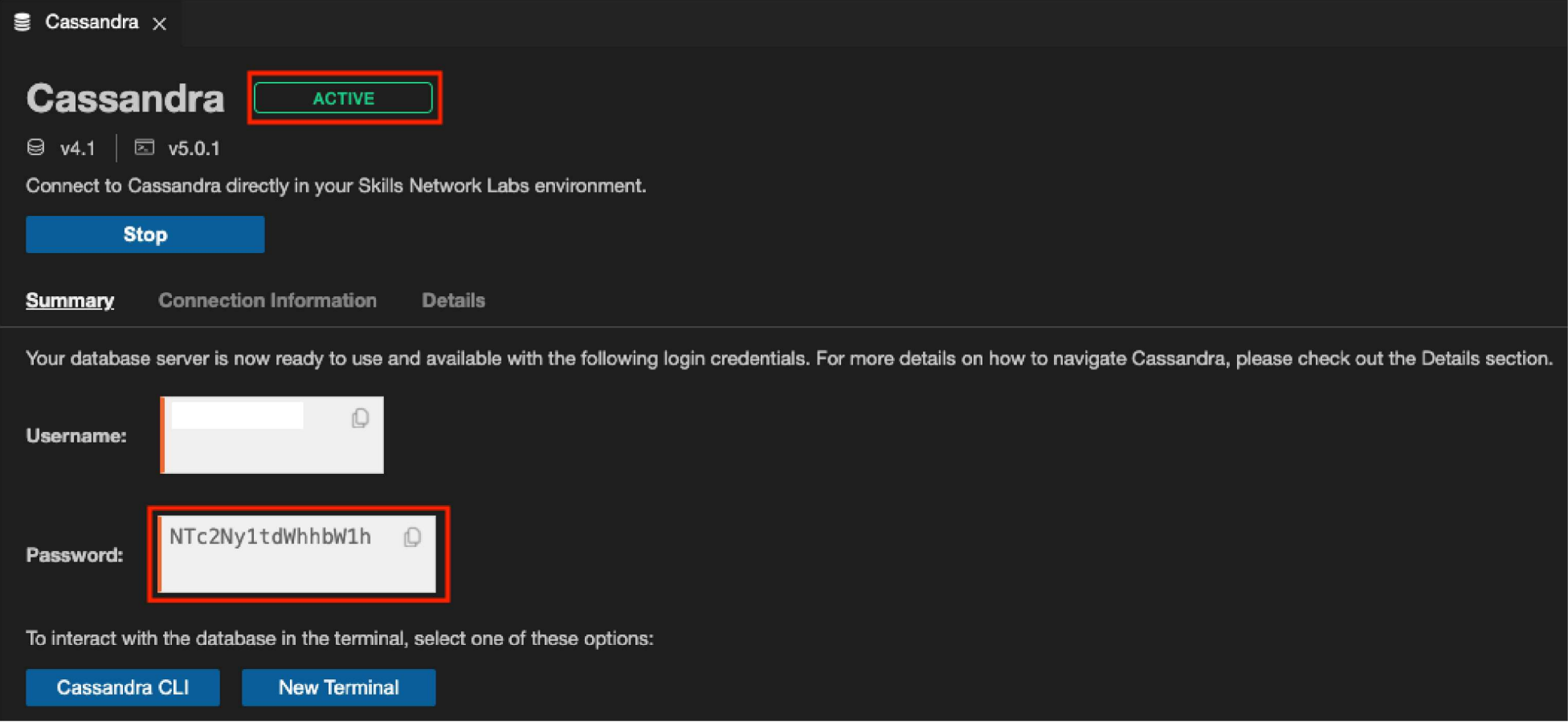
Once you click on it, you will see more details about it and a button to start it.



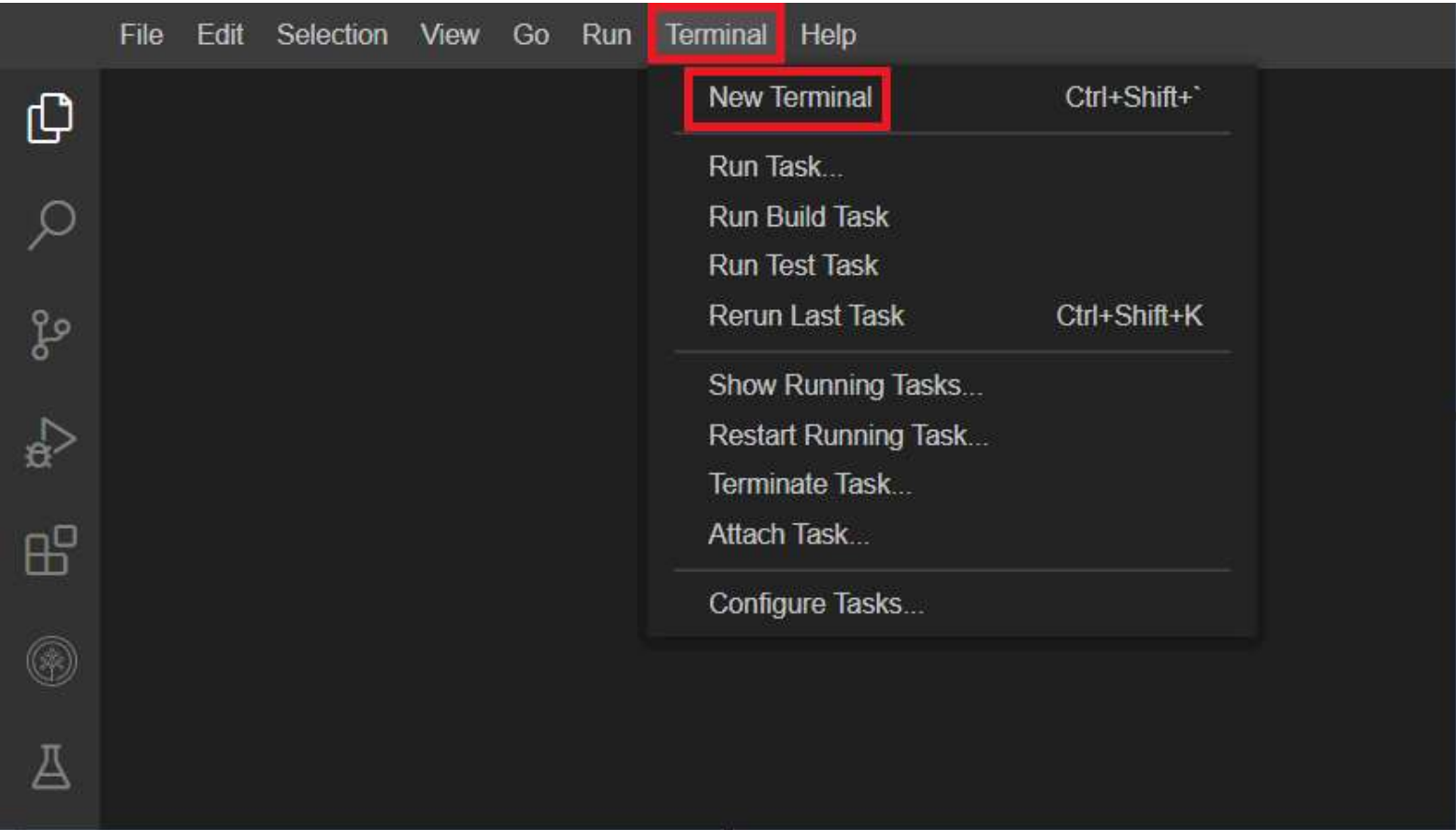
Clicking on the start button will run a background process to configure and start your Cassandra server.



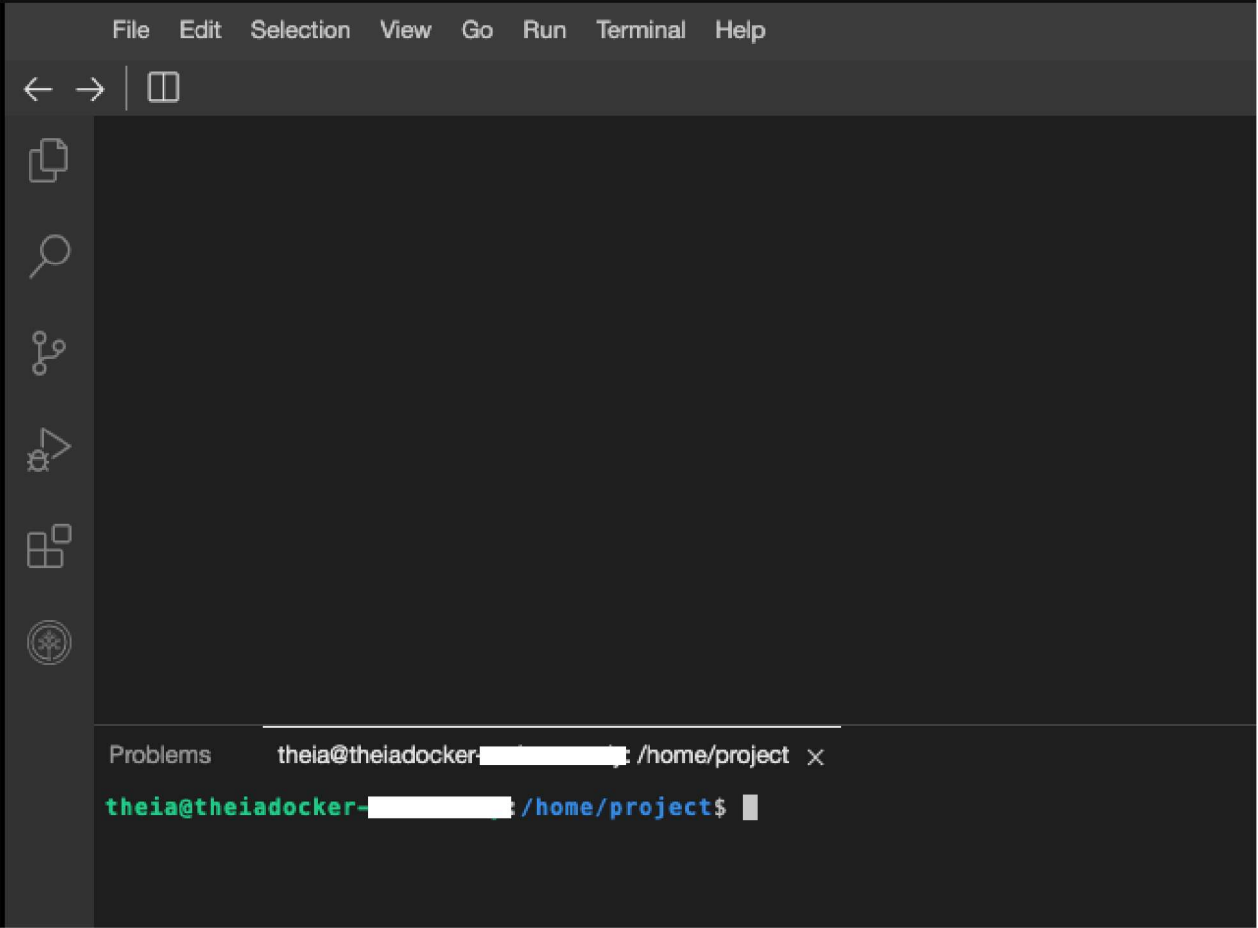
Shortly after that, your server is ready for use. This deployment has access control enabled and Cassandra enforces authentication. So, take note of the password as you will need it to login as cassandra user.



You can now either open terminal and enter details yourself.



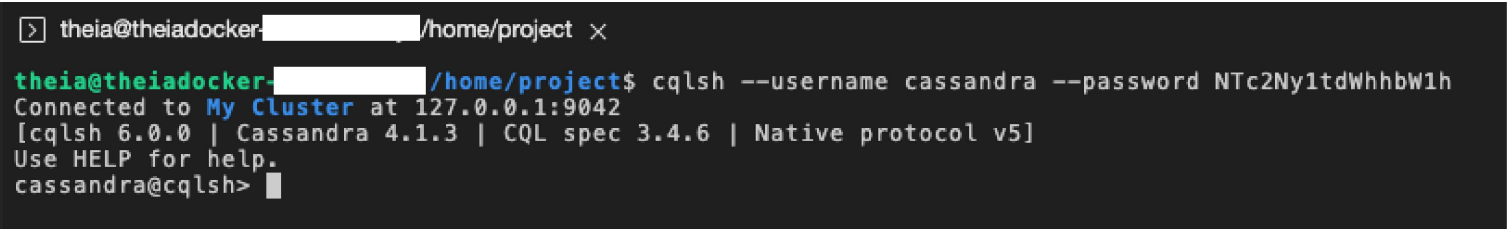
This will open a new terminal at the bottom of the screen as in the image below.



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)

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

Copied! Executed!



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.

Cassandra

Cassandra

ACTIVE

v4.1

v5.0.1

Connect to Cassandra directly in your Skills Network Labs environment.

Stop

Summary

Connection Information

Details

Your database server is now ready to use and available with the following login credentials:

Username:

Password:

NTc2Ny1tdWhhbW1h

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

Cassandra CLI

New Terminal

Exercise 1 - Create a keyspace

The below command creates a keyspace called training, using SimpleStrategy and a replication_factor of 3.

SimpleStrategy is used when all the nodes in your cassandra cluster exist in a single data center.

On cqlsh run the below command.

```
1. 1
2. 2

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

Copied!

List all keyspaces.

```
1. 1

1. describe keyspaces
```

Copied!

Exercise 2 - Describe a keyspace

In the previous exercise you have created a keyspace named training.

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

Describe a keyspace.

```
1. 1

1. describe training
```

Copied!

Exercise 3 - Alter a keyspace

In a previous exercise you created a keyspace named training using SimpleStrategy.

Let us change that to use NetworkTopologyStrategy.

NetworkTopologyStrategy is used when all the nodes in your cassandra cluster are spread across multiple data centers.

Alter a keyspace.

```
1. 1
2. 2

1. ALTER KEYSPACE training
2. WITH replication = {'class': 'NetworkTopologyStrategy'};
```

Copied!

Verify the changes using the describe command.

```
1. 1

1. describe training
```

Copied!

Exercise 4 - Use a keyspace

To use a keyspace run the below command.

```
1. 1

1. use training;
```

Copied!

List all tables in this keyspace.

```
1. 1

1. describe tables
```

Copied!

You will get an empty list because we do not have any tables yet.

Exercise 5 - Drop a keyspace

To drop a keyspace run the below command.

```
1. 1

1. drop keyspace training;
```

Copied!

Verify the changes using the describe command.

```
1. 1
2. 2

1. use system;
2. describe keyspaces
```

Copied!

Practice exercises

1. Problem: Create a keyspace named sales using SimpleStrategy and a replication factor of 1.

▼ Click here for Hint

use the create keyspace command

▼ Click here for Solution

On the `cqlsh` run the below command.

```
1. 1
2. 2
1. CREATE KEYSPACE sales
2. WITH replication = {'class': 'SimpleStrategy', 'replication_factor' : 1};
```

Copied!

2. Problem: Change the replication factor to 3 for the sales keyspace.

▼ Click here for Hint

use the alter keyspace command

▼ Click here for Solution

On the cqlsh run the below command.

```
1. 1
2. 2
1. ALTER KEYSPACE sales
2. WITH replication = {'class': 'SimpleStrategy', 'replication_factor' : 3};
```

Copied!

3. Problem: Drop the sales keyspace.

▼ Click here for Hint

use the drop keyspace command

▼ Click here for Solution

On the cqlsh run the below command.

```
1. 1
1. drop keyspace sales;
```

Copied!

4. Problem: Verify that the sales keyspace is dropped.

▼ Click here for Hint

use the describe command

▼ Click here for Solution

On the cqlsh run the below command.

```
1. 1
1. describe keyspaces
```

Copied!

Summary

In this lab, you have gained an understanding of basic operations for keyspace in Cassandra.

Author(s)

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