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

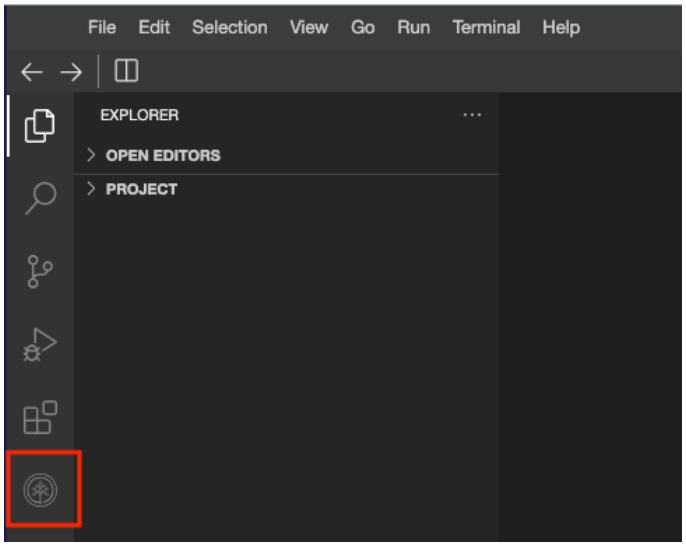
This Skills Network Labs Cloud IDE provides a hands-on environment for course and project related labs. It utilizes Theia, an open-source IDE (Integrated Development Environment) platform, that can be run on desktop or on the cloud. To complete this lab, we will be using the Cloud IDE based on Theia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

Important Notice about this lab environment

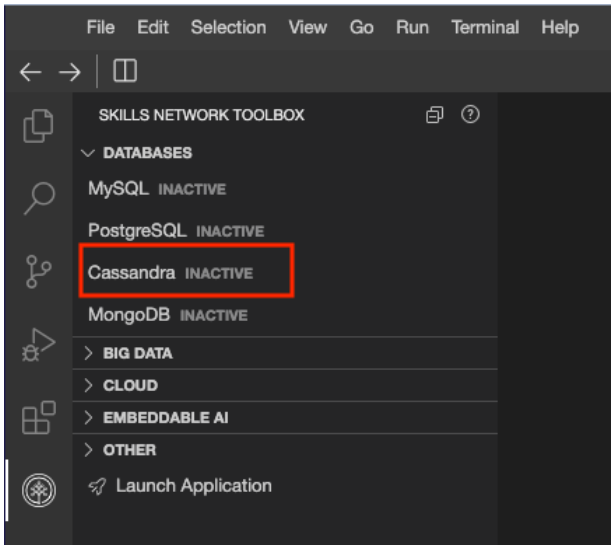
Please be aware that sessions for this lab environment are not persisted. Every time you connect to this lab, a new environment is created for you. Any data you may have saved in the earlier session would get lost. Plan to complete these labs in a single session, to avoid losing your data.

Set-up: Start Cassandra

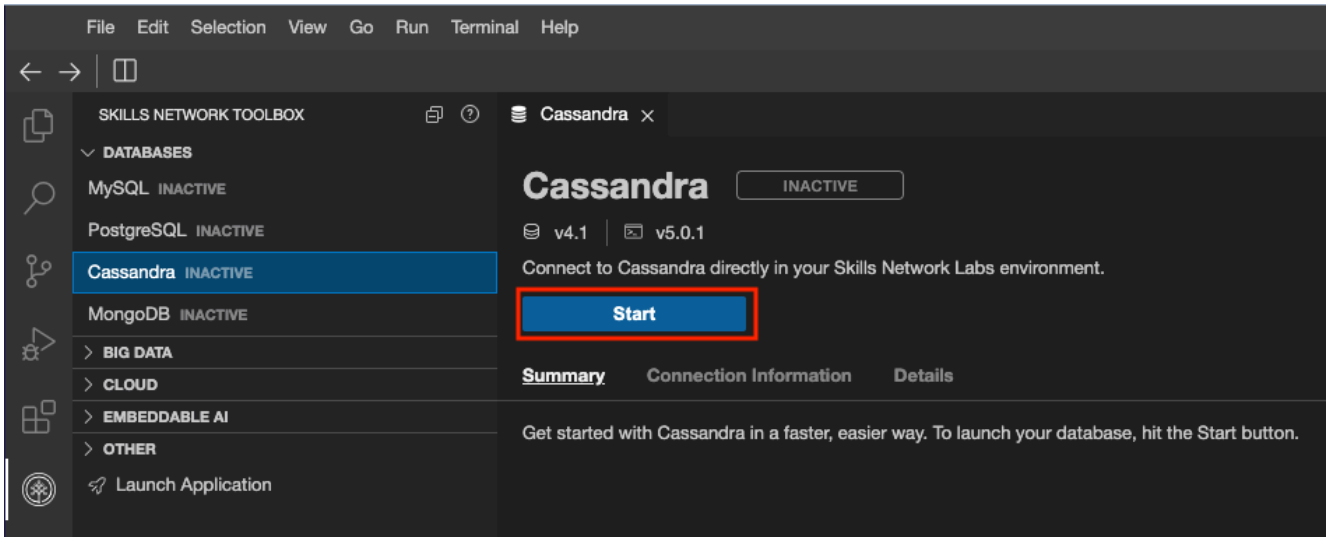
Navigate to Skills Network Toolbox.



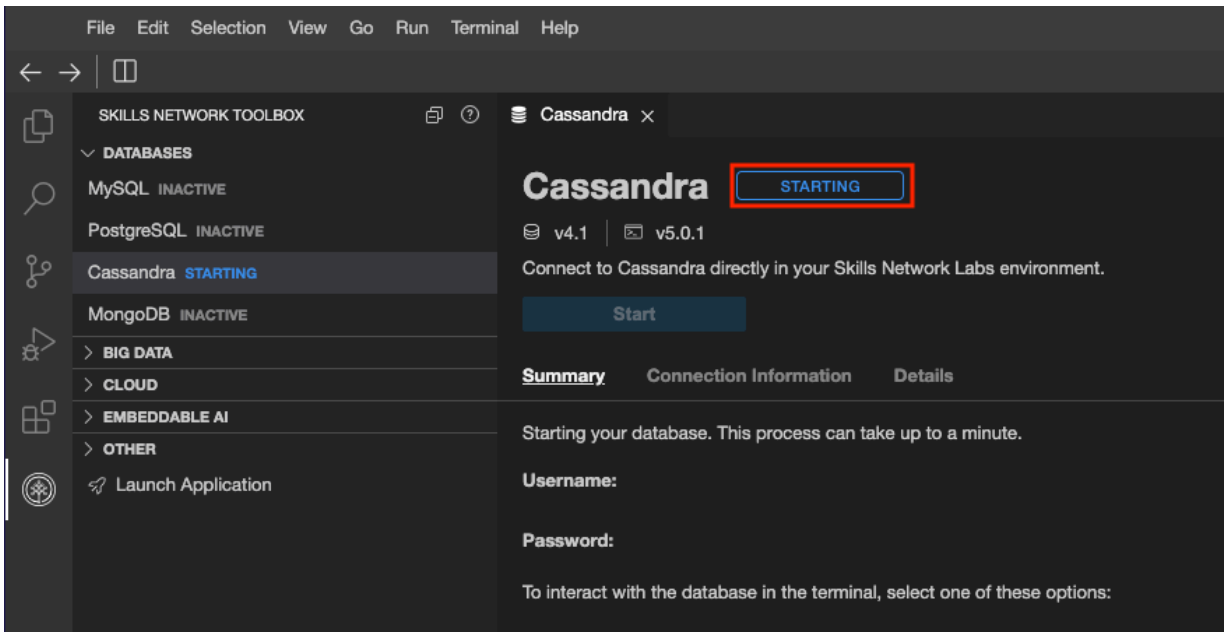
You will notice Cassandra listed there, but inactive. Which means the database is not available to use.



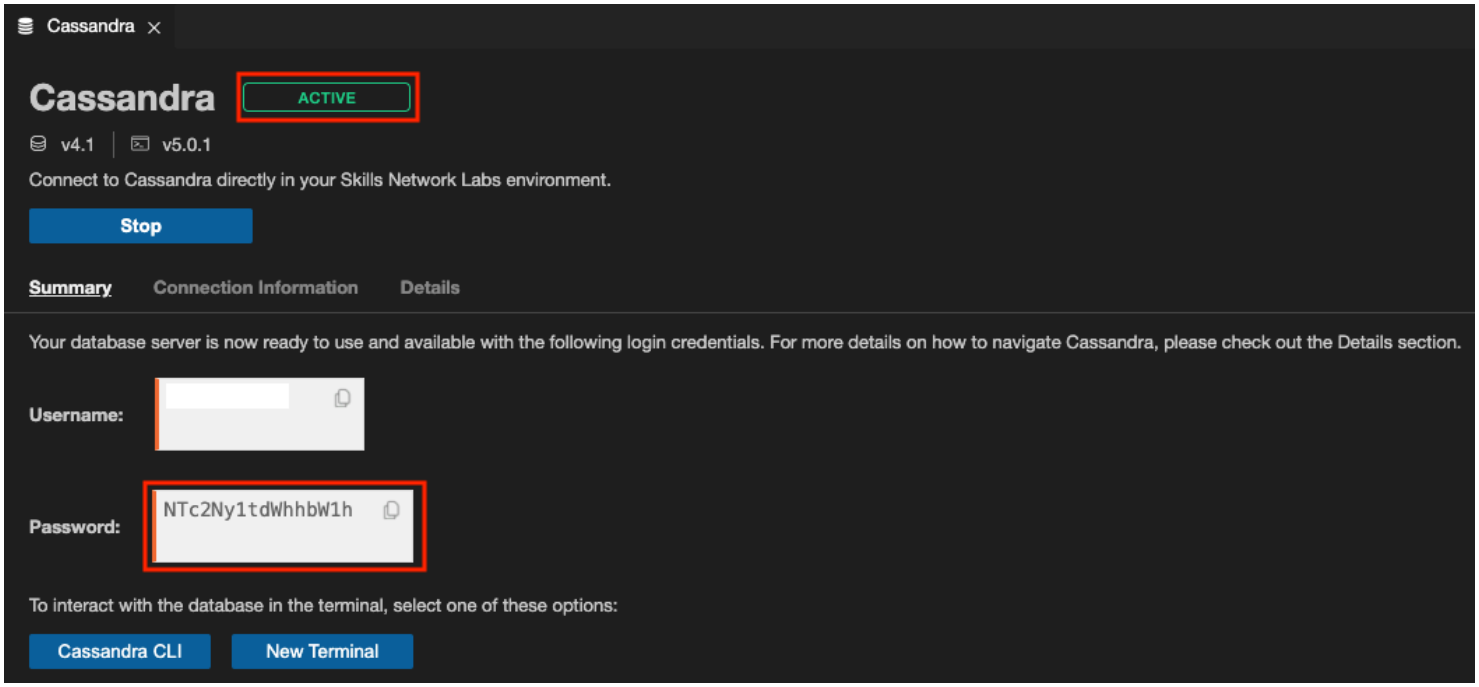
Once you click on it, you will see more details about it and a button to start it.



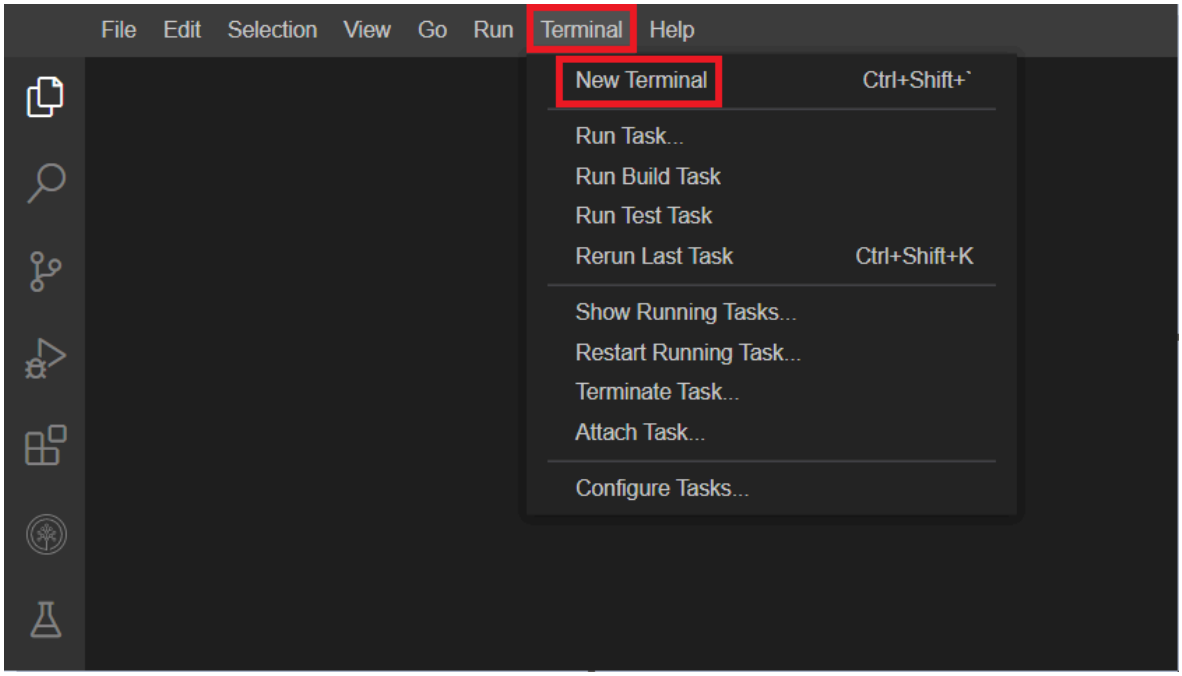
Clicking on the start button will run a background process to configure and start your Cassandra server.



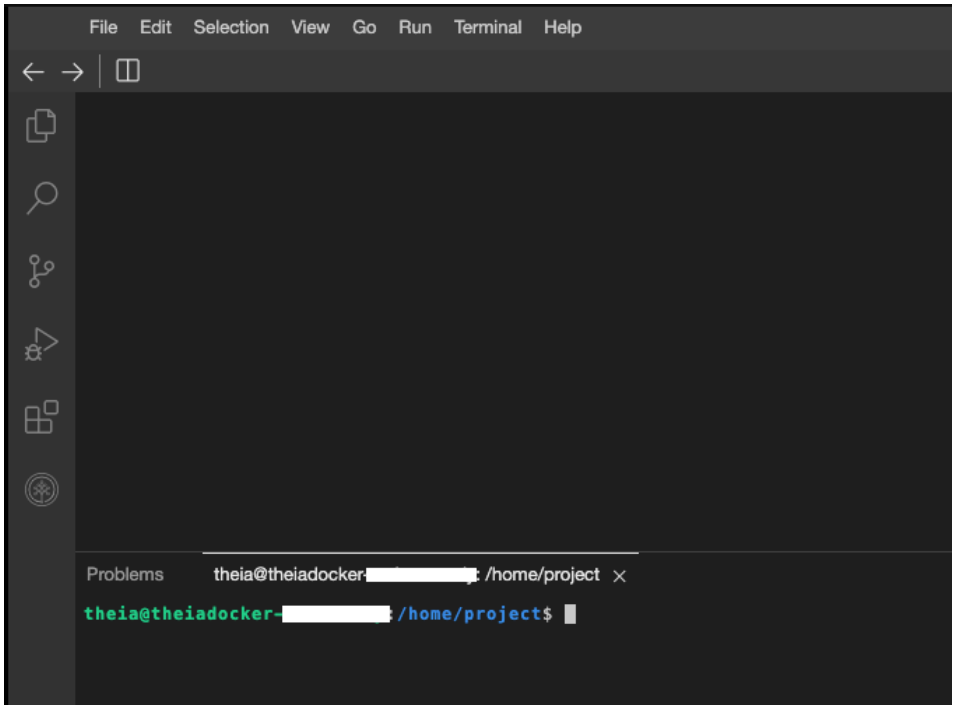
Shortly after that, your server is ready for use. This deployment has access control enabled and Cassandra enforces authentication. So, take note of the password as you will need it to login as `cassandra` user.



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)

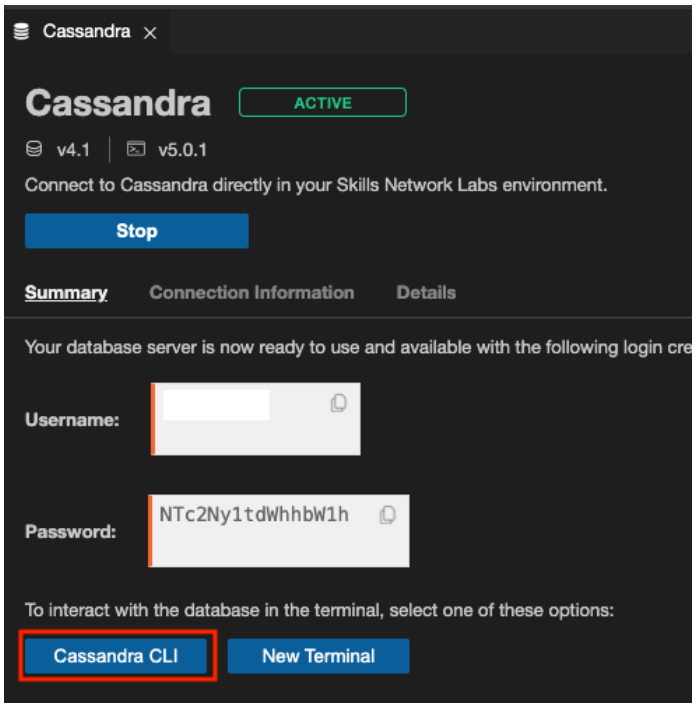
```
1. 1
```

```
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.



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
   ▶ Click here for Solution

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

   ▶ Click here for Hint
   ▶ Click here for Solution

3. Problem: Drop the `sales` keyspace.

   ▶ Click here for Hint
   ▶ Click here for Solution

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

   ▶ Click here for Hint
   ▶ Click here for Solution

Summary

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

Author(s)

Muhammad Yahya