

# Documentation - CassTl 1.0.0

Tomas Franek

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## 1 First launch of application

When you first launch the application, the "Create Master Password window" will appear, as shown in figure 1. You can proceed to the "Connection profiles window" by accepting the risk of storing passwords to the Cassandra database in plain text and clicking the "Continue without Master Password" button. In that case, you can proceed to section 2. Alternatively, you can create a Master Password, in which case, continue to section 1.1.

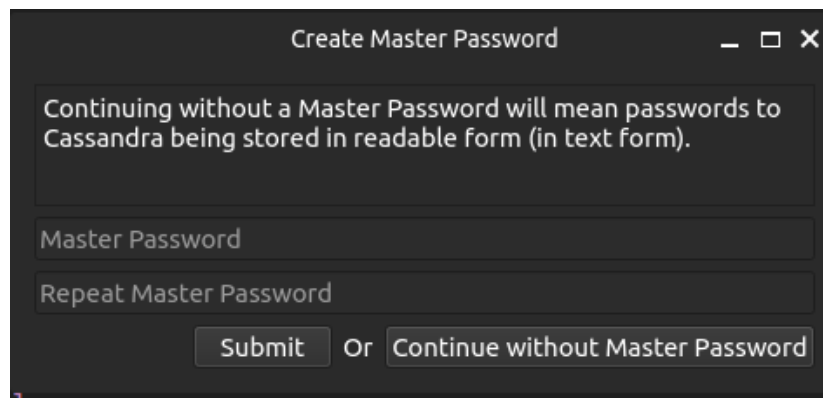


Figure 1: Create Master Password

### 1.1 Create Master Password

When a Master Password is created, passwords for Cassandra databases will be encrypted using the symmetric algorithm AES-256. The Master Password itself will be hashed using SHA-256.

To create a new Master Password, simply type it into the "Master Password" field shown in figure 1 and repeat it in the "Repeat Master Password" field. Then click "Submit", and you will automatically proceed to the "Connection profiles window" in section 2.

## 1.2 Authenticate by Master Password

Once the Master Password is created, you'll need to authenticate to proceed to the "Connection profile window". The authentication window is depicted in figure 2. Simply enter your Master Password and click "Submit". The "Connection profile window" is shown in figure 4. After authentication continue to section 2.

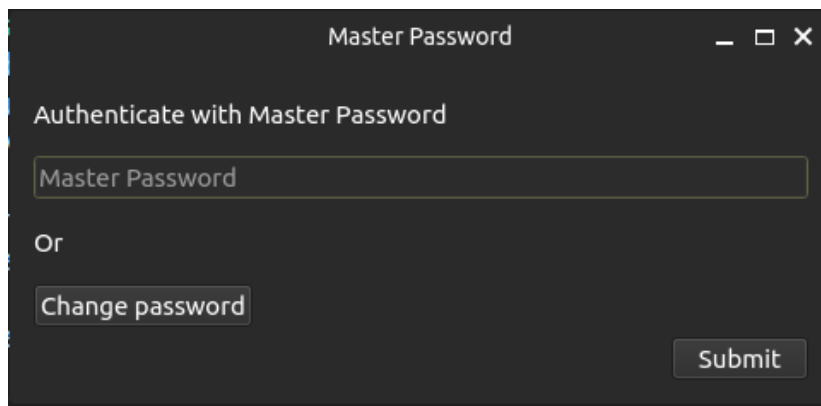


Figure 2: Authentication by Master Password

## 1.3 Change Master Password

After creating the Master Password, you can modify it by clicking the "Change password" button, as illustrated in figure 2. Upon clicking this button, the "Change Master Password" window will appear, as depicted in figure 3. In this window, you can input the old Master Password, followed by the new one and its repetition, then click "Submit".

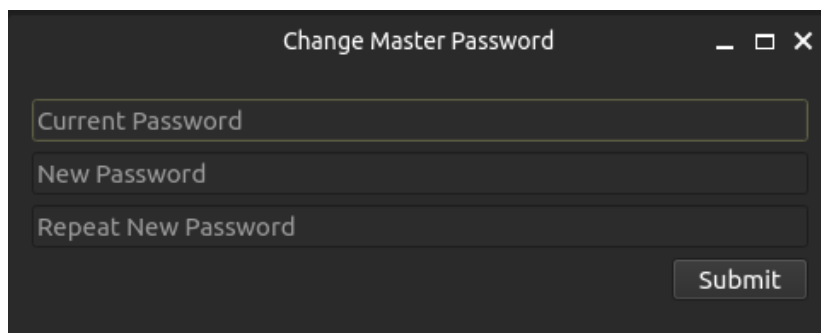


Figure 3: Change Master Password

All previously stored passwords for Cassandra databases will undergo decryption using the old Master Password and subsequent encryption using the new one.

## 2 Connection profiles

In figure 4, you'll find the "Connection profiles window." Here, you have the option to select the Cassandra databases you wish to connect to. You can create new profiles, edit existing ones, delete selected profiles, or search by "connection\_name" or "host."

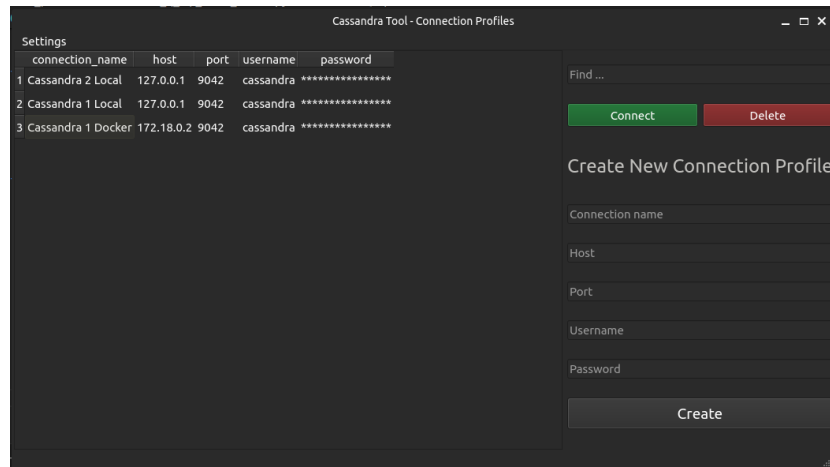


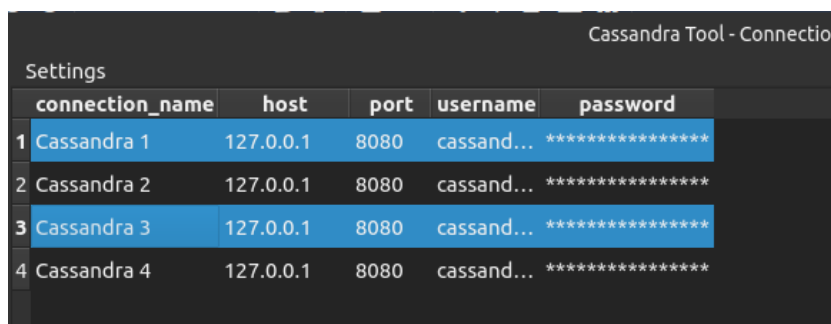
Figure 4: Connection profiles window

### 2.1 Create new Connection profile

To create a connection profile, simply fill out the form located on the right side of figure 4. Provide details such as Connection name, Host, Port, Username, and Password, then click on "Create". Your new connection profile will instantly appear in the connection profile table, unless an error occurs during the process.

## 2.2 Delete Connection profile

You have the option to delete one or multiple existing connection profiles simultaneously. Simply click on the number next to the connection profiles in the table on the left side. If you wish to delete more than one profile, hold down the "Ctrl" key while clicking on the desired profiles. Once you have selected all the desired connection profiles like it is shown on figure 5, click on "Delete". A confirmation prompt will appear to ensure you want to proceed with the deletion.



Cassandra Tool - Connection Settings					
	connection_name	host	port	username	password
1	Cassandra 1	127.0.0.1	8080	cassand...	*****
2	Cassandra 2	127.0.0.1	8080	cassand...	*****
3	Cassandra 3	127.0.0.1	8080	cassand...	*****
4	Cassandra 4	127.0.0.1	8080	cassand...	*****

Figure 5: Selected Connection profiles

## 2.3 Edit Connection profile

Editing a connection profile is straightforward: just double-click on the cell you wish to modify, type in the desired value, and press "Enter", or simply click outside of the edited cell. Your changes will be saved automatically.

## 2.4 Connect to Cassandra database

You have the flexibility to connect to multiple Cassandra databases. Simply select them by pressing "Ctrl" and clicking on the corresponding numbers on the left side of the Connection profiles table. Once you've chosen the desired connection profiles, as illustrated in figure 5, click "Connect", and the "Main window" depicted in figure 6 will open. You can now continue to section 3.

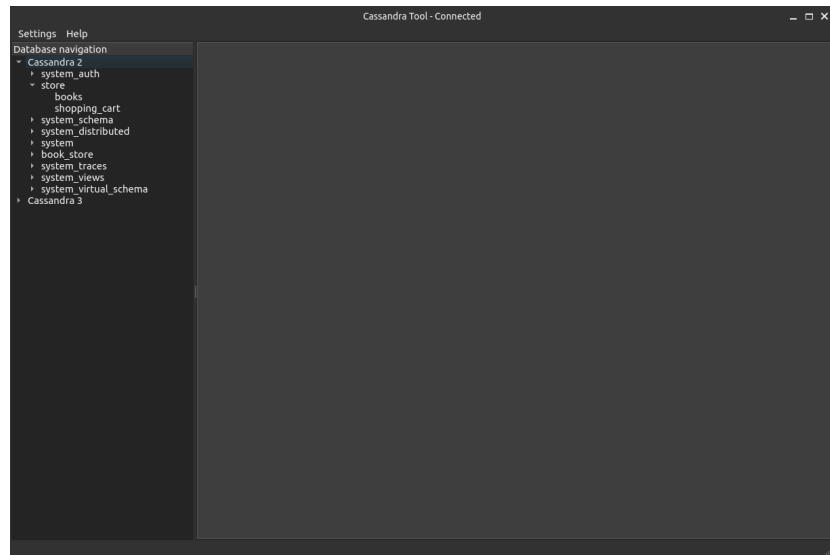


Figure 6: Main window - connected



### 3 Main window

Once connected, your list of connected databases will be displayed on the left side of the Main window under the "Database navigation" section as you can see on figure 6. This section is presented as a tree view, allowing you to expand it by double-clicking or clicking on the small rectangle to its left. Within your databases, you'll find keyspaces, including default system keyspaces, which can also be expanded to reveal tables within them.

Double-clicking on a table will open a frame in the main part of the window, as shown in figure 7. Here, you can have multiple tables open simultaneously. Each table bookmark displays the table's name, with the keyspace name in parentheses. Below this information are buttons for "Properties" and "Data".

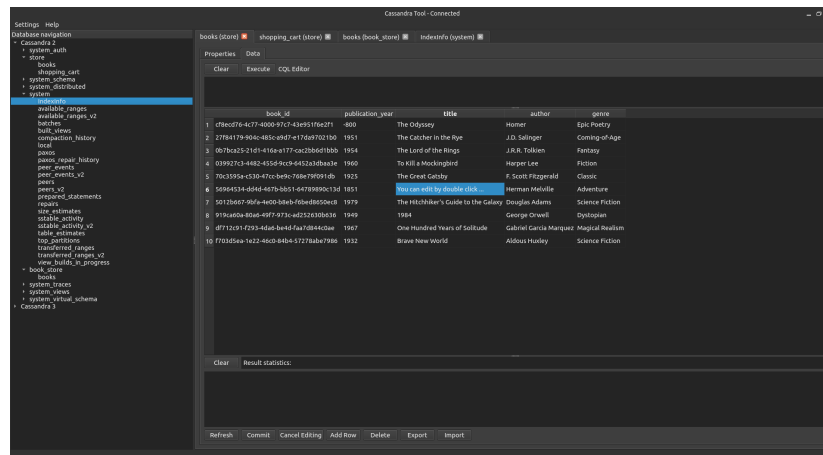


Figure 7: Main window - data

#### 3.1 Data section

To customize the size of sections such as "Database Navigation," "CQL Editor," or "CQL Results," simply click on the three dots located at the center and drag your mouse, as demonstrated in figure 8. This intuitive action allows you to seamlessly adjust the dimensions of these sections to suit your preferences or even hide them entirely.

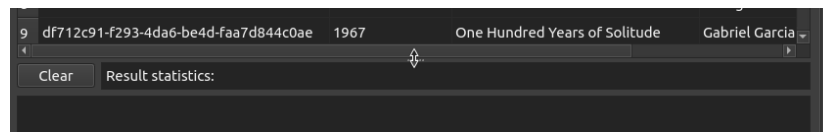


Figure 8: Main window - adjust size of the section

### 3.1.1 CQL Editor

By default, the "Data" section will be displayed, allowing you to execute your own queries in the "CQL Editor" section, as depicted in figure 9. The results of your queries will be shown in the bottom part, as illustrated in figure 10. This section can be used for easier cell editing by copying data from the cell to the CQL Editor, where you have more space to work.

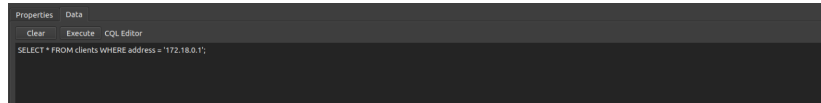


Figure 9: Main window - CQL Editor

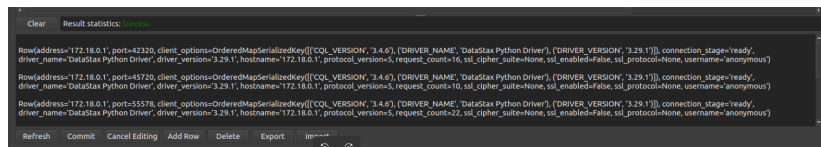


Figure 10: Main window - CQL results

### 3.1.2 Table view - Edit

In the middle section, you'll find the table data, which can be edited by double-clicking and then clicking the "Commit" button in the bottom section. All data manipulation buttons, including "Commit", are located below the CQL results, as seen in figure 10. Until you click the "Commit" button, the edited data will not be saved to your database; they will only be displayed in the local table view. Editing can be canceled by clicking "Cancel Editing" or "Refresh".

To add a new row to your database, click on "Add Row", fill in the columns, and then click the "Commit" button.

### 3.1.3 Table view - Delete

To delete selected rows, hold down "Ctrl" and click on the row numbers you wish to delete. Alternatively, hold down "Ctrl", click on one row number, and then drag your mouse up or down to select multiple rows. Once selected, click on the "Delete" button located in the bottom section with all data manipulation buttons, as depicted in figure 10.

### 3.1.4 Table view - Export/Import

To export the entire table, click on the "Export" button in the bottom section. Similarly, you can perform a SELECT query and export only selected data to

CSV. After clicking the "Export" button, the "Export window" will appear, as shown in figure 11. Here, you can enter the file name (without extension, as ".csv" will be added automatically) and specify the destination directory. You can either type the directory path or use the "Select Directory" option to browse and select the directory. Then, click "Export" to initiate the export process.

Importing follows a similar process. Click on the "Import" button, choose your CSV file, and then click "Import", as illustrated in figure 11.

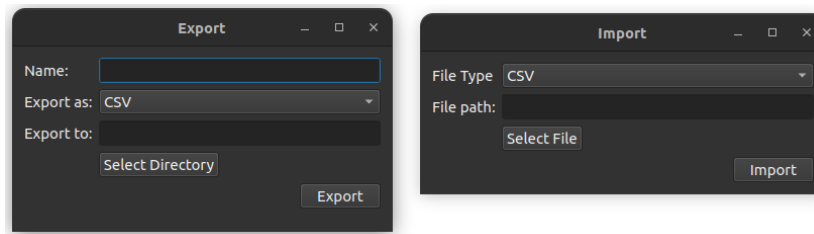


Figure 11: Export/Import windows

## 3.2 Properties section

### 3.2.1 Columns section

In the "Columns" section, you'll find a comprehensive list of all columns present in the table, along with their respective data types, as demonstrated in figure 12.

books (store) ✕

Properties

Data

Columns

Keys

Indexes

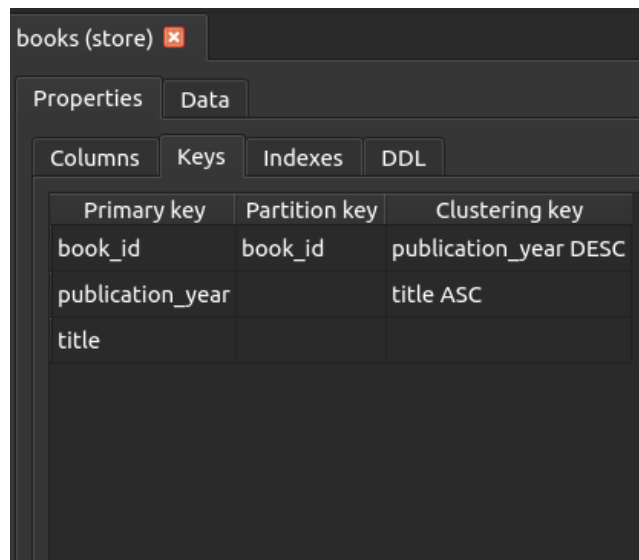
DDL

Column name	Type
author	text
book_id	uuid
genre	text
publication_year	int
title	text

Figure 12: Properties - Columns

### 3.2.2 Keys section

The "Keys" section organizes all primary keys, distinguishing between partition keys and clustering keys. Additionally, it indicates any ASC/DESC ordering associated with clustering keys, as exemplified in figure 13.

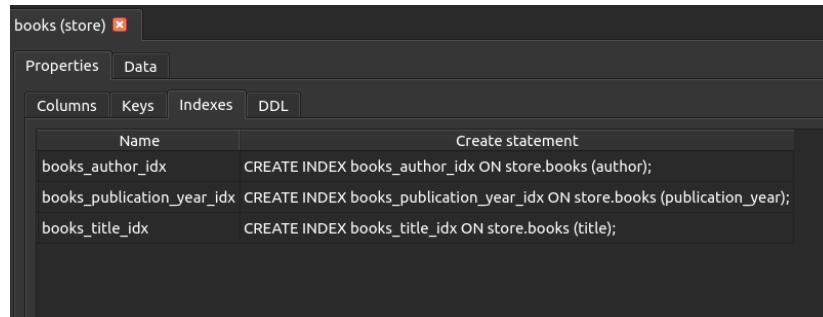


books (store) ✕		
Properties Data		
Columns Keys Indexes DDL		
Primary key	Partition key	Clustering key
book_id	book_id	publication_year DESC
publication_year		title ASC
title		

Figure 13: Properties - Keys

### 3.2.3 Indexes section

In the "Indexes" section, you can conveniently observe all indexes created within the table. This includes the index name and its corresponding creation statement, providing a clear overview of indexing strategies, as depicted in figure 14.

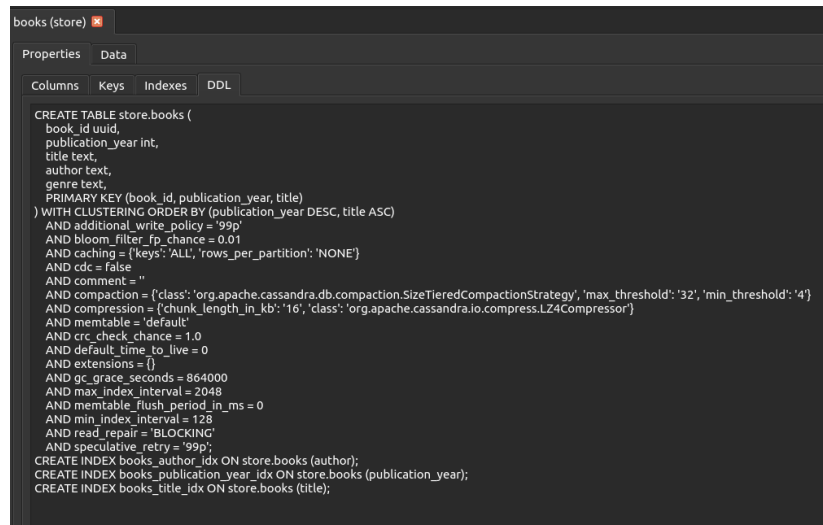


Name	Create statement
books_author_idx	CREATE INDEX books_author_idx ON store.books (author);
books_publication_year_idx	CREATE INDEX books_publication_year_idx ON store.books (publication_year);
books_title_idx	CREATE INDEX books_title_idx ON store.books (title);

Figure 14: Properties - Indexes

### 3.2.4 Data definition language section

The "DDL" section presents the data definition language of the table, offering insights into its structure and schema. This encompasses various table attributes, constraints, and specifications that define its design and functionality. As illustrated in figure 15, this section provides a detailed representation of the table's schema, facilitating better understanding and management of its properties.



```
books (store)
Properties  Data
Columns  Keys  Indexes  DDL
CREATE TABLE store.books (
  book_id uuid,
  publication_year int,
  title text,
  author text,
  genre text,
  PRIMARY KEY (book_id, publication_year, title)
) WITH CLUSTERING ORDER BY (publication_year DESC, title ASC)
AND additional_write_policy = '99p'
AND bloom_filter_fp_chance = 0.01
AND caching = {'keys': 'ALL', 'rows_per_partition': 'NONE'}
AND cdc = false
AND comment = ''
AND compaction = {'class': 'org.apache.cassandra.db.compaction.SizeTieredCompactionStrategy', 'max_threshold': '32', 'min_threshold': '4'}
AND compression = {'chunk_length_in_kb': '16', 'class': 'org.apache.cassandra.io.compress.LZ4Compressor'}
AND memtable = 'default'
AND crc_check_chance = 1.0
AND default_time_to_live = 0
AND extensions = {}
AND gc_grace_seconds = 864000
AND max_index_interval = 2048
AND memtable_flush_period_in_ms = 0
AND min_index_interval = 128
AND read_repair = 'BLOCKING'
AND speculative_retry = '99p';
CREATE INDEX books_author_idx ON store.books (author);
CREATE INDEX books_publication_year_idx ON store.books (publication_year);
CREATE INDEX books_title_idx ON store.books (title);
```

Figure 15: Properties - Data definition language

### 3.3 Keyspace and Table manipulation

To refresh your connections to Cassandra databases, simply right-click on the database name and select "Refresh", as demonstrated in figure 16. This action is particularly helpful when you've created a keyspace or table using the "CQL Editor", and the newly created keyspace or table isn't immediately visible in the "Database navigation" section.

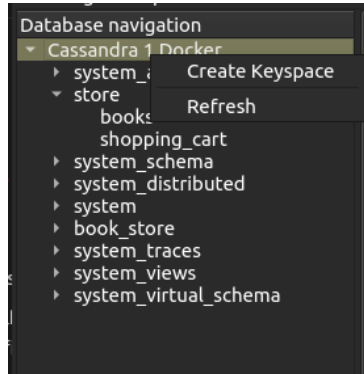


Figure 16: Right click - database name

#### 3.3.1 Keyspace and Table deletion

You can delete a keyspace by right-clicking on its name and choosing "Delete Keyspace", as depicted in figure 17. Similarly, to remove a table, right-click on its name and select "Delete Table", as shown in figure 18. These options provide convenient means to manage your database structure directly from the interface.

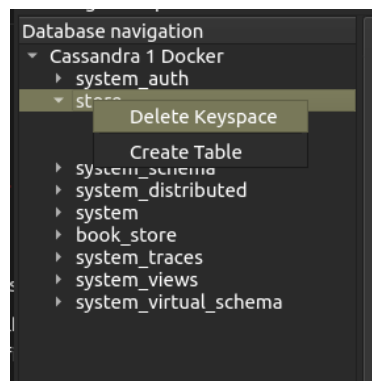


Figure 17: Right click - keyspace

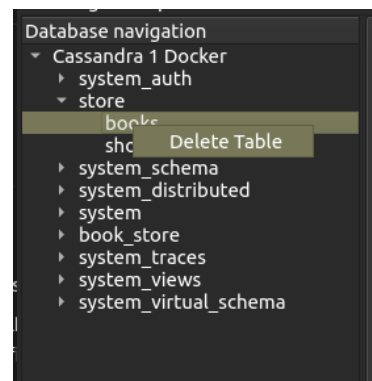


Figure 18: Right click - table



### 3.3.2 Create keyspace

As depicted in figure 16, you can create a new keyspace by right-clicking on the database name and choosing the "Create Keyspace" option. This action triggers the appearance of the "Create keyspace window".

Within this window, you can specify the name of your new keyspace and select various parameters such as replication class, replication factor, or durable writes.

By default, the SimpleStrategy replication class is preselected, as illustrated in figure 19. However, if you opt for the NetworkTopologyStrategy replication class, the window will adjust accordingly, as shown in figure 20. In this scenario, you have the flexibility to add datacenters and define their replication factors individually.

Once you've configured your keyspace settings, simply click on "Submit" to finalize the creation process.

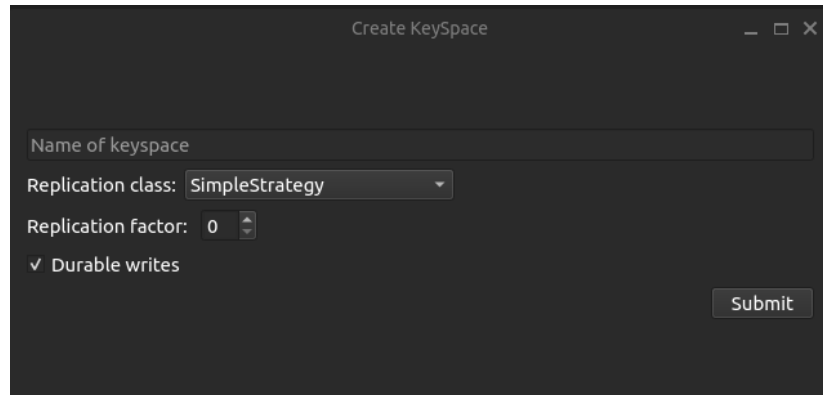


Figure 19: Create keyspace - SimpleStrategy

Figure 20: Create keyspace - NetworkTopologyStrategy

### 3.3.3 Create table

As depicted in figure 17, you can create a new table by right-clicking on the keyspace name and choosing the "Create Table" option. This action triggers the appearance of the "Create table window" as illustrated in figure 21.

Within this window, you'll be prompted to specify the name of your new table and add columns. Each column requires a name and a selection of data type. Moreover, you have the flexibility to designate whether a column serves as a partition key, clustering key, or if you intend to create an index for it. Should you inadvertently add more columns than desired, simply click on "Remove Column" located on the right side of the column.

Once you've configured your table to your specifications, proceed by clicking on "Submit". This action finalizes the creation process.

Create Table

Create new table in keyspace 'store'.

Table Name example\_table

Add Column

example\_column

ascii

Remove Column

Partition key

Clustering key

Create index

Order by: ASC

Column name

ascii

Remove Column

Partition key

Clustering key

Create index

Order by: ASC

Column name

ascii

Remove Column

Partition key

Clustering key

Create index

Order by: ASC

Submit

Figure 21: Right click - table

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