Author : Amine Benhamza, email: amine.benhamza@gmail.com

In this tutorial, we'll discuss how to provision a multi-node DSE cluster while using DSE OpsCenter and DSE Studio

DSE Cluster

You'll need to install Docker Compose and download .yml files from the following link : https://github.com/datastax/docker-images/tree/master/example_compose_yamls

To configure a 3-node cluster with OpsCenter and Studio, apply the following command lines :

```
docker-compose -f docker-compose.yml -f docker-compose.opscenter.yml
\ -f docker-compose.studio.yml up -d --scale node=0
```

```
docker-compose -f docker-compose.yml up -d --scale node=1
```

```
docker-compose -f docker-compose.yml up -d --scale node=2
```

Wait for each node to finish bootstrapping before running `docker-compose` for the next node.

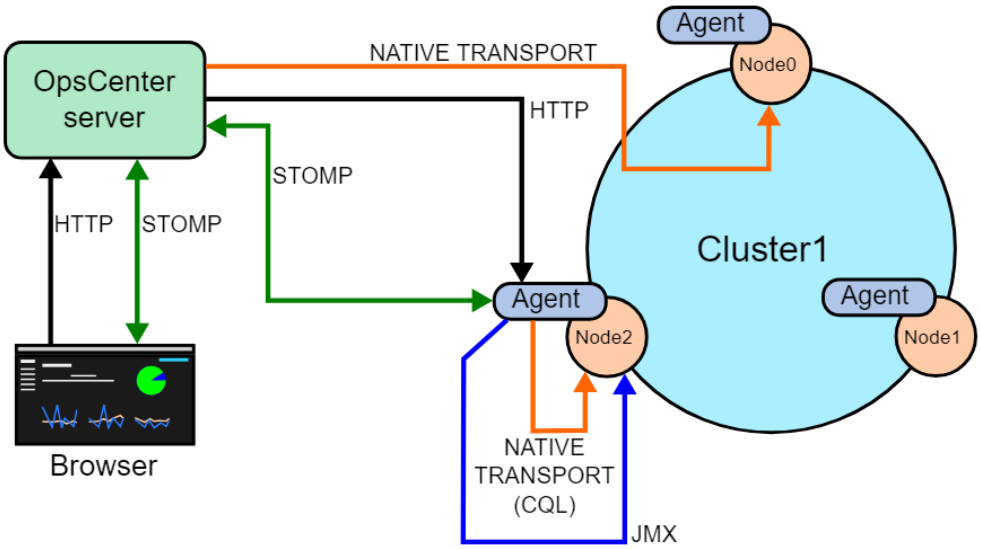
DSE OpsCenter

DataStax Enterprise OpsCenter is a visual management and monitoring solution for DSE clusters. It simplifies administration tasks as :

- Adding and expanding clusters
- Configuring nodes
- Viewing performance metrics
- Rectifying issues
- Monitoring cluster health on the dashboard

Author : Amine Benhamza, email: amine.benhamza@gmail.com

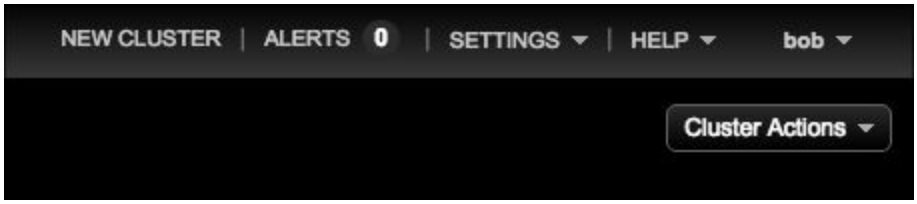
OpsCenter architecture is based on agents installed on each node.



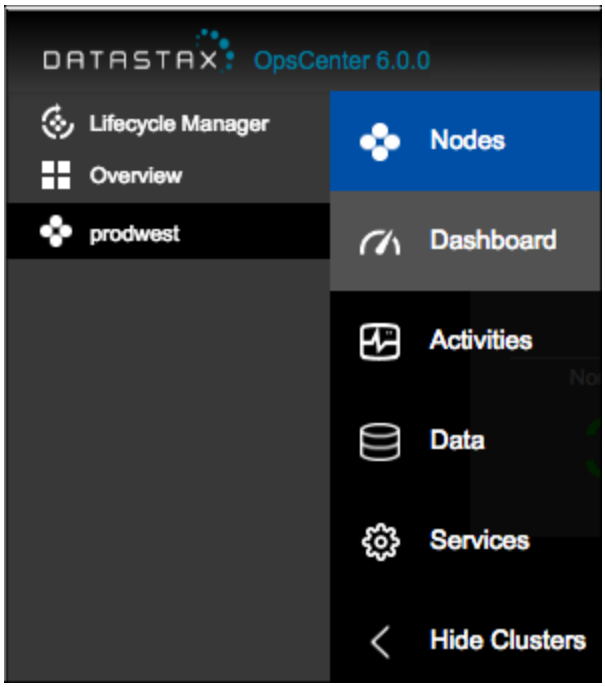
Source : https://docs.datastax.com/en/opscenter/6.7/opsc/opscArchOvr.html

It's highly recommended to install OpsCenter out of DSE Cluster.

The main menu and Cluster Actions menu are available at the top OpsCenter User Interface :



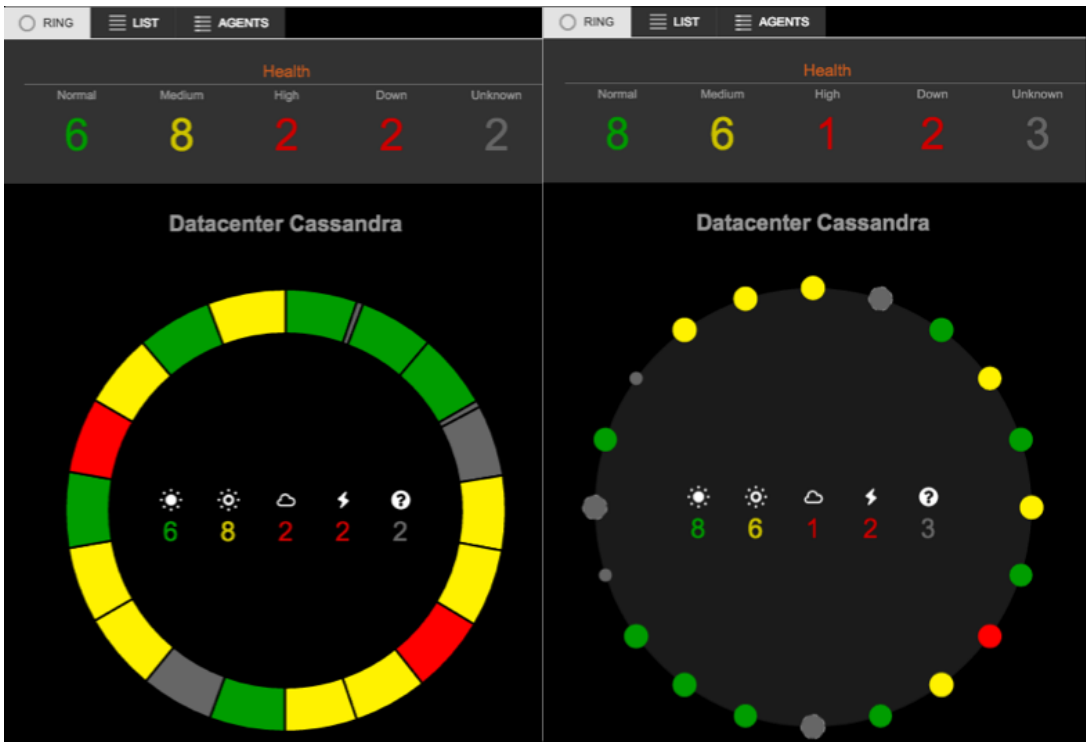
The left navigation pane holds links to Lifecycle Manager, OpsCenter Overview and monitored clusters. The cluster navigation menu provides access to the functional areas such as Nodes, Activities, Data, and Services.



Cluster Ring View

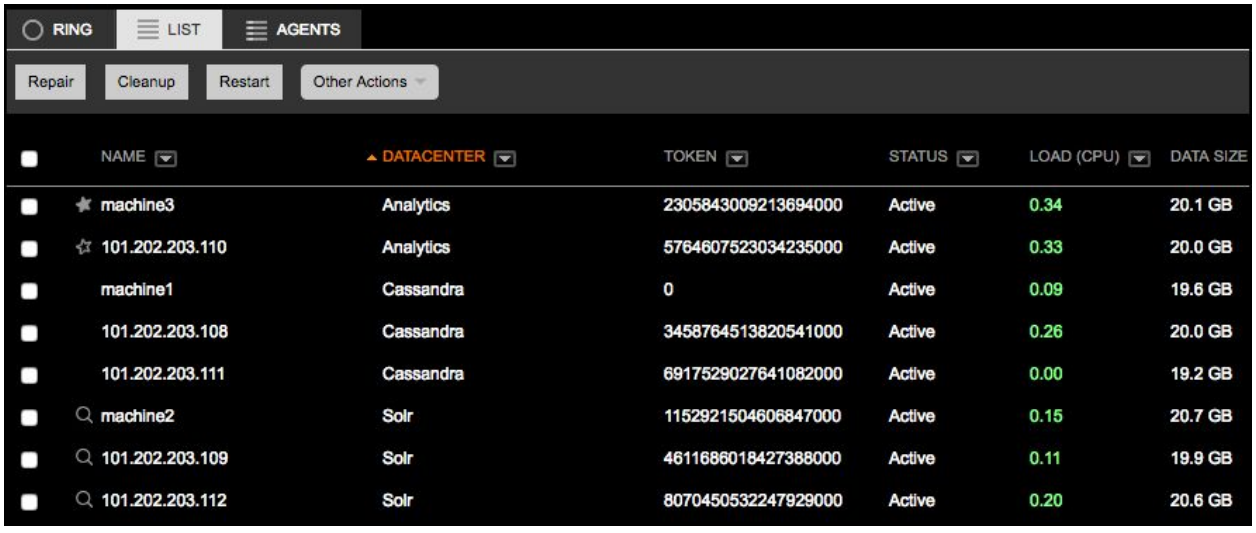
The Ring View displays a cluster as a ring of nodes from which you can determine at a glance node health, data distribution, and datacenter balance within a single visualization.

Author : Amine Benhamza, email: amine.benhamza@gmail.com



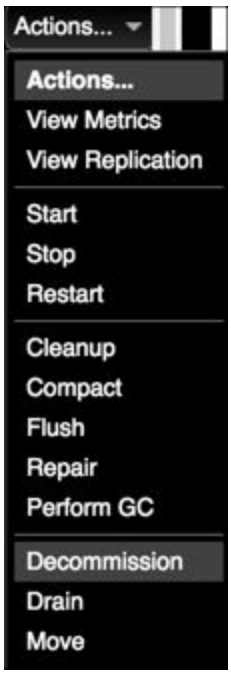
Cluster List View

List View is an alternative to the graphical Ring View. List View provides different information on the cluster state and health. All data is updated in real time.



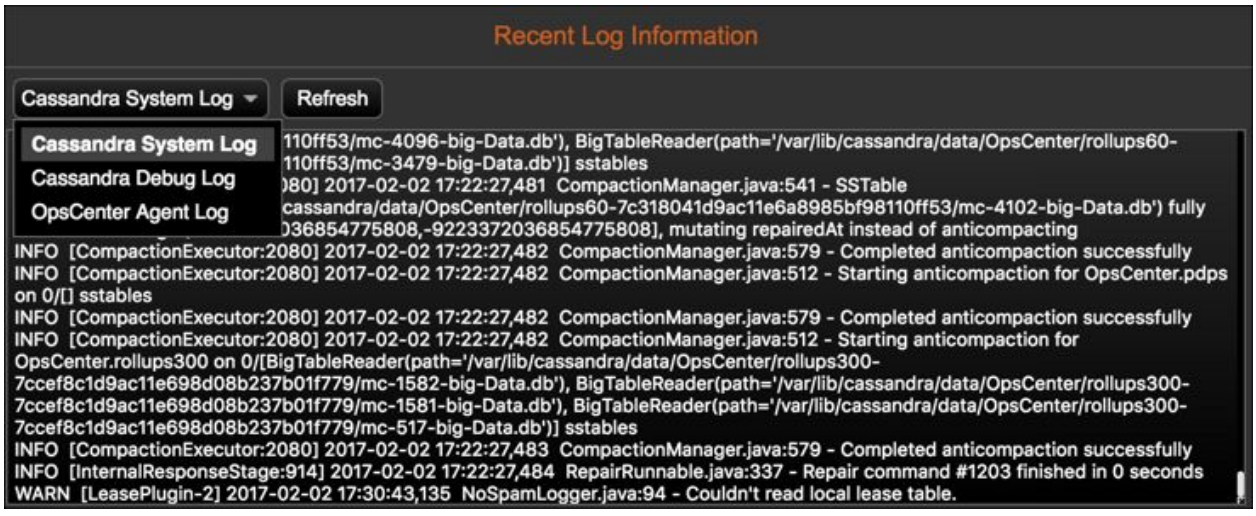
The list view allows also to perform tasks on nodes as : Repair, Clean, Restart and other Actions :

Author : Amine Benhamza, email: amine.benhamza@gmail.com



When clicking on the combo box of a node, the Details dialog appears. Scroll down to the **Recent Log Information** pane.

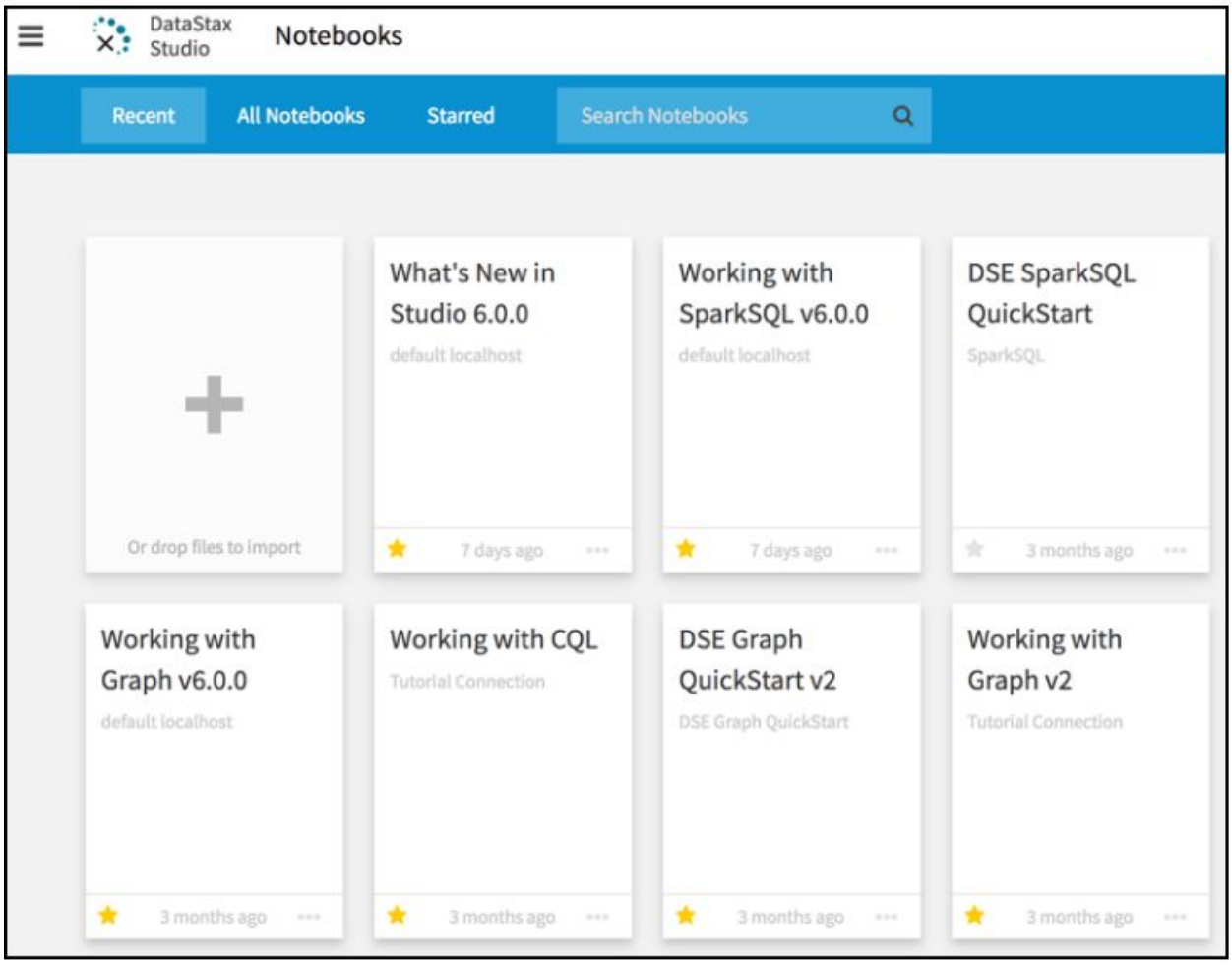
1. Select the log to view:
    - Cassandra System Log
    - Cassandra Debug Log
    - OpsCenter Agent Log
2. Click **Refresh**.
3. The last 1000 lines of the selected log are fetched and displayed in the **Recent Log Information** pane.



Author : Amine Benhamza, email: amine.benhamza@gmail.com

DSE Studio

DataStax Studio is an interactive developer tool for CQL, Spark SQL, and DSE Graph. Developers and analysts can mix code, annotations, query results, and visualizations into notebooks.



In the following we'll focus on CQL.

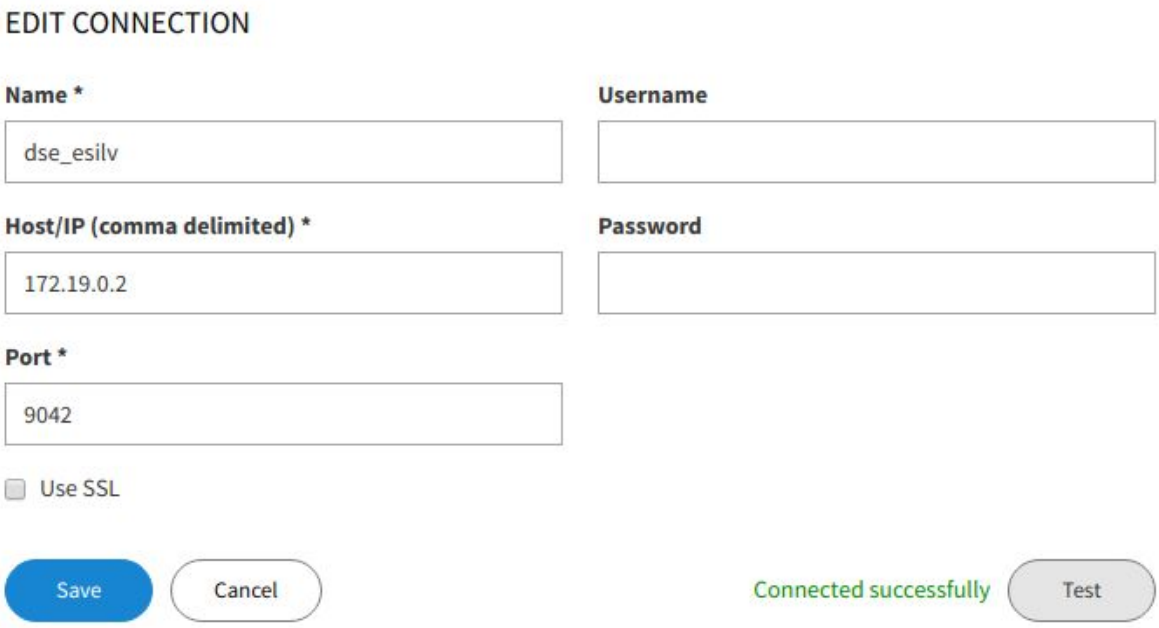
In the top left, click connections, then enter information for a new connection :

Name : Name of the connection from the notebook to a DSE cluster.

Host/IP : The host names or IP addresses of the DSE cluster to connect to.

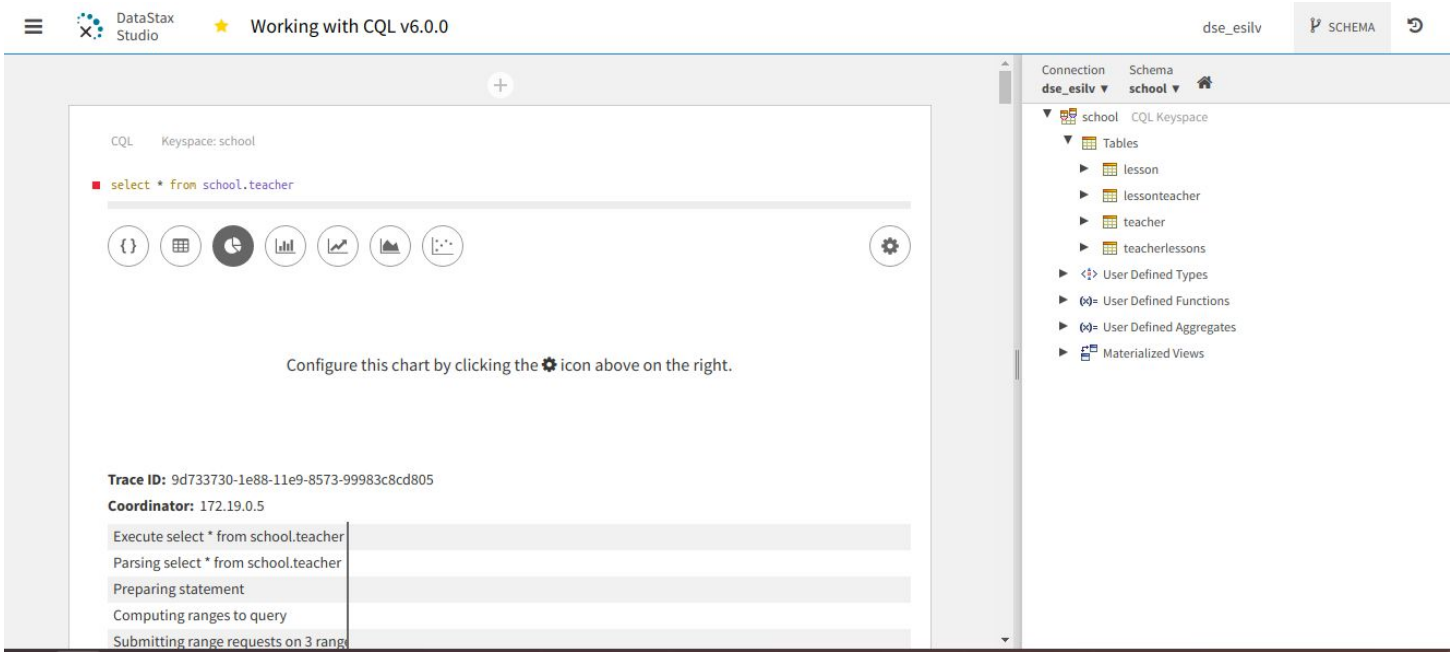
Port : IP connection port. Default: 9042.

Author : Amine Benhamza, email: amine.benhamza@gmail.com

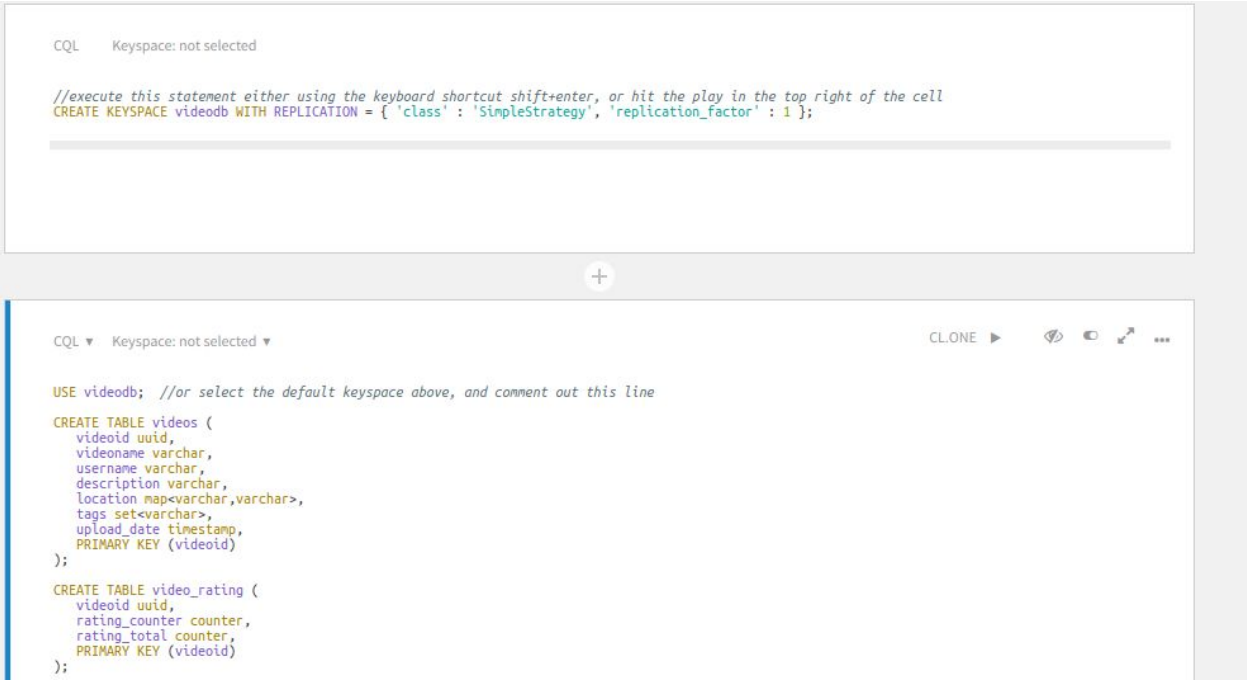


A notebook consists of a sequence of cells. A cell is a multi-line text input field.

On the right pane, you explore your schema, school the keyspace, explore tables and columns



On the left side, you can perform any of the CQL commands



Note that it's possible to chose, the execution mode, among four options :