CASSANDRA

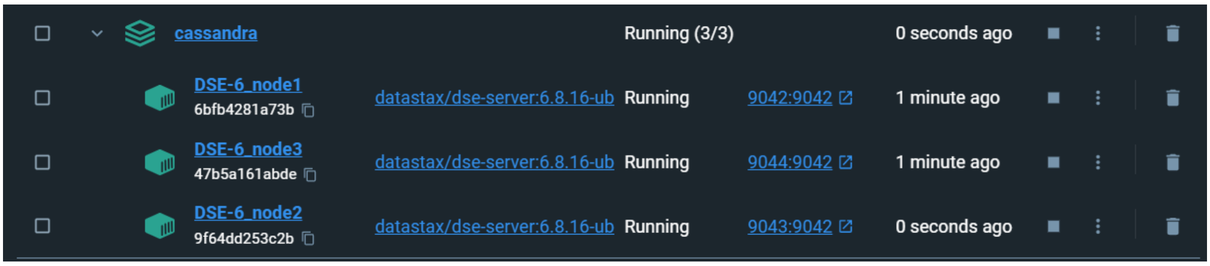
```
david@LAPTOP-UQ114ETA:/mnt/c/Users/David/Desktop/DAVID/00.-FP/04.-B_DATOS/cassandra$ ls
docker-compose.yml
```

Creamos el archivo do docker-compose.yml

```
david@LAPTOP-UQ114ETA:/mnt/c/Users/David/Desktop/DAVID/00.-FP/04.-B_DATOS/cassandra$ ls
docker-compose.yml
david@LAPTOP-UQ114ETA:/mnt/c/Users/David/Desktop/DAVID/00.-FP/04.-B_DATOS/cassandra$ docker compose -f docker-compose.ym
l up
[+] Running 19/19
 ✓ node2 16 layers [####################]      0B/0B      Pulled                                                    80.0s
   ✓ c13bd28f35dc Pull complete                                                                                    4.2s
   ✓ 0dc69daaa449 Pull complete                                                                                    4.4s
   ✓ 755d653b6228 Pull complete                                                                                   32.9s
   ✓ a5ea20cc493e Pull complete                                                                                   33.8s
   ✓ 4bf873279014 Pull complete                                                                                   33.9s
   ✓ 44fde88c4818 Pull complete                                                                                   34.1s
   ✓ f4e3008bfe4a Pull complete                                                                                   34.2s
   ✓ ff9002066711 Pull complete                                                                                   34.4s
   ✓ aa5021e1dd75 Pull complete                                                                                   55.3s
   ✓ 0b4e5582d536 Pull complete                                                                                   55.4s
   ✓ d3dcde48834f Pull complete                                                                                   55.5s
   ✓ 54c750f038bd Pull complete                                                                                   55.6s
   ✓ 5c0d7d13972c Pull complete                                                                                   55.6s
   ✓ 93b60e864ca0 Pull complete                                                                                   55.7s
   ✓ 8f8472b3ed49 Pull complete                                                                                   77.0s
   ✓ 1a45cbded976 Pull complete                                                                                   77.4s
 ✓ node3 Pulled                                                                                                   80.0s
 ✓ node1 Pulled                                                                                                   80.0s
[+] Running 4/4
 ✓ Network cassandra_dc1ring  Created                                                                              1.1s
 ✓ Container DSE-6_node1      Created                                                                              1.2s
 ✓ Container DSE-6_node2      Created                                                                              0.7s
 ✓ Container DSE-6_node3      Created                                                                              0.7s
Attaching to DSE-6_node1, DSE-6_node2, DSE-6_node3
```

```
   ✓ 5c0d7d13972c Pull complete                                                                    55.6s
   ✓ 93b60e864ca0 Pull complete                                                                    55.7s
   ✓ 8f8472b3ed49 Pull complete                                                                    77.0s
   ✓ 1a45cbded976 Pull complete                                                                    77.4s
 ✓ node3 Pulled                                                                                    80.0s
 ✓ node1 Pulled                                                                                    80.0s
[+] Running 4/4
 ✓ Network cassandra_dc1ring  Created                                                               1.1s
 ✓ Container DSE-6_node1      Created                                                               1.2s
 ✓ Container DSE-6_node2      Created                                                               0.7s
 ✓ Container DSE-6_node3      Created                                                               0.7s
Attaching to DSE-6_node1, DSE-6_node2, DSE-6_node3
DSE-6_node1  | Applying changes to /opt/dse/resources/cassandra/conf/cassandra.yaml ...
DSE-6_node1  | done.
DSE-6_node1  | Applying changes to /opt/dse/resources/cassandra/conf/cassandra-rackdc.properties ...
DSE-6_node1  | done.
DSE-6_node1  | Running dse cassandra -f -R
DSE-6_node2  | Applying changes to /opt/dse/resources/cassandra/conf/cassandra.yaml ...
DSE-6_node3  | Applying changes to /opt/dse/resources/cassandra/conf/cassandra.yaml ...
DSE-6_node2  | done.
DSE-6_node2  | Applying changes to /opt/dse/resources/cassandra/conf/cassandra-rackdc.properties ...
DSE-6_node2  | done.
DSE-6_node2  | Running dse cassandra -f -R
DSE-6_node3  | done.
DSE-6_node3  | Applying changes to /opt/dse/resources/cassandra/conf/cassandra-rackdc.properties ...
DSE-6_node3  | done.
DSE-6_node3  | Running dse cassandra -f -R
DSE-6_node2 exited with code 137
DSE-6_node3 exited with code 1
```

Comprobamos que los contenedores se han levantado correctamente.




```
david@LAPTOP-UQ114ETA:/mnt/c/Users/David/Desktop/DAVID/00.-FP/04.-B_DATOS/cassandra$ docker ps
CONTAINER ID   IMAGE                              COMMAND                  CREATED         STATUS          PORTS

                                                                   NAMES
9f64dd253c2b   datastax/dse-server:6.8.16-ubi7   "/entrypoint.sh dse …"   5 minutes ago   Up 15 seconds   4040/tcp, 5598-5599/tcp, 7000-7001/tcp, 7077/tcp,
7080-7081/tcp, 7199/tcp, 8090/tcp, 8182/tcp, 8609/tcp, 8983-8984/tcp, 9103/tcp, 9142/tcp, 9160/tcp, 9999-10000/tcp, 18080/tcp, 0.0.0.0:9043->9042/tcp   DSE-
6_node2
47b5a161abde   datastax/dse-server:6.8.16-ubi7   "/entrypoint.sh dse …"   5 minutes ago   Up 15 seconds   4040/tcp, 5598-5599/tcp, 7000-7001/tcp, 7077/tcp,
7080-7081/tcp, 7199/tcp, 8090/tcp, 8182/tcp, 8609/tcp, 8983-8984/tcp, 9103/tcp, 9142/tcp, 9160/tcp, 9999-10000/tcp, 18080/tcp, 0.0.0.0:9044->9042/tcp   DSE-
6_node3
6bfb4281a73b   datastax/dse-server:6.8.16-ubi7   "/entrypoint.sh dse …"   5 minutes ago   Up 18 seconds   4040/tcp, 5598-5599/tcp, 7000-7001/tcp, 7077/tcp,
7080-7081/tcp, 7199/tcp, 8090/tcp, 8182/tcp, 8609/tcp, 8983-8984/tcp, 9103/tcp, 9142/tcp, 9160/tcp, 9999-10000/tcp, 18080/tcp, 0.0.0.0:9042->9042/tcp   DSE-
6_node1
```

```
david@LAPTOP-UQ114ETA:/mnt/c/Users/David/Desktop/DAVID/00.-FP/04.-B_DATOS/cassandra$ docker ps -a
CONTAINER ID   IMAGE                              COMMAND                  CREATED              STATUS                          PORTS

               NAMES
9f64dd253c2b   datastax/dse-server:6.8.16-ubi7   "/entrypoint.sh dse …"   10 minutes ago      Exited (1) 3 minutes ago

               DSE-6_node2
47b5a161abde   datastax/dse-server:6.8.16-ubi7   "/entrypoint.sh dse …"   10 minutes ago      Exited (137) 2 minutes ago

               DSE-6_node3
6bfb4281a73b   datastax/dse-server:6.8.16-ubi7   "/entrypoint.sh dse …"   10 minutes ago      Up 2 minutes                    4040/tcp, 5598-5599/tcp, 7000-7
001/tcp, 7077/tcp, 7080-7081/tcp, 7199/tcp, 8090/tcp, 8182/tcp, 8609/tcp, 8983-8984/tcp, 9103/tcp, 9142/tcp, 9160/tcp, 9999-10000/tcp, 18080/tcp, 0.0.0.0:90
42->9042/tcp   DSE-6_node1
7ce1618a6390   trafex/php-nginx                   "/usr/bin/supervisor…"   About an hour ago   Exited (0) About an hour ago

               recursing_sutherland
99312704b03a   mysql                              "docker-entrypoint.s…"   About an hour ago   Exited (0) 55 minutes ago

               container-mySQL
```

Accedemos a los nodos.

```
david@LAPTOP-UQ114ETA:/mnt/c/Users/David/Desktop/DAVID/00.-FP/04.-B_DATOS/cassandra$ docker exec -it DSE-6_node1 bash
dse@node1:~$
```

```
david@LAPTOP-UQ114ETA:/mnt/c/Users/David/Desktop/DAVID/00.-FP/04.-B_DATOS/cassandra$ docker exec -it DSE-6_node2 bash
dse@node2:~$
```

```
david@LAPTOP-UQ114ETA:/mnt/c/Users/David/Desktop/DAVID/00.-FP/04.-B_DATOS/cassandra$ docker exec -it DSE-6_node3 bash
dse@node3:~$
```

```
dse@node3:~$ nodetool help
usage: nodetool [(-h <host> | --host <host>)] [(-p <port> | --port <port>)]
        [(-u <username> | --username <username>)]
        [(-pw <password> | --password <password>)]
        [(-pwf <passwordFilePath> | --password-file <passwordFilePath>)] <command>
        [<args>]

The most commonly used nodetool commands are:
    abortrebuild                        Abort a currently running rebuild operation. Currently active streams will f
inish but no new streams will be started.
    assassinate                         Forcefully remove a dead node without re-replicating any data.  Use as a las
t resort if you cannot removenode
    bootstrap                           Monitor/manage node's bootstrap process
    bufferpool                          Prints the buffer pool statistics
    cleanup                             Triggers the immediate cleanup of keys no longer belonging to a node. By def
ault, clean all keyspaces
    clearsnapshot                       Remove the snapshot with the given name from the given keyspaces. If no snap
shotName is specified we will remove all snapshots
    clientstats                         Print information about connected clients
    compact                             Force a (major) compaction on one or more tables or user-defined compaction
on given SSTables
    compactionhistory                   Print history of compaction
    compactionstats                     Print statistics on compactions
    decommission                        Decommission the *node I am connecting to*
    describecluster                     Print the name, snitch, partitioner and schema version of a cluster
    describering                        Shows the token ranges info of a given keyspace
    disableautocompaction               Disable autocompaction for the given keyspace and table
    disablebackup                       Disable incremental backup
    disablebinary                       Disable native transport (binary protocol)
```

```
david@LAPTOP-UQ114ETA:/mnt/c/Users/David/Desktop/DAVID/00.-FP/04.-B_DATOS/cassandra$ docker exec -it DSE-6_node1 bash
dse@node1:~$ nodetool status
Datacenter: DC1
===============
Status=Up/Down
|/ State=Normal/Leaving/Joining/Moving/Stopped
--  Address     Load       Tokens       Owns (effective)  Host ID                               Rack
DS  172.30.0.4  ?          3            100.0%            5bafc28e-1fe8-4f56-9e36-8b184e408ac8  RAC1
UN  172.30.0.2  216.02 KiB  3            100.0%            779383a4-a43b-4e82-905b-f9f87ddc825a  RAC1
```

Lanzamos comandos para crear tablas

```
dse@node1:~$ cqlsh
Connected to dse51_cluster at 127.0.0.1:9042.
[cqlsh 6.8.0 | DSE 6.8.16 | CQL spec 3.4.5 | DSE protocol v2]
Use HELP for help.
cqlsh>
```

```
cqlsh> DESC keyspaces;

system_virtual_schema  system_schema  dse_leases          system_traces
dse_system_local       system_auth    system_backups      dse_perf
dse_security           system_views   dse_insights        dse_insights_local
solr_admin             system         system_distributed  dse_system
```

```
cqlsh> CREATE KEYSPACE musicDb WITH replication = {'class': 'SimpleStrategy', 'replication_factor' : '3'};
```

```
cqlsh> USE musicDb;
cqlsh:musicdb>
```

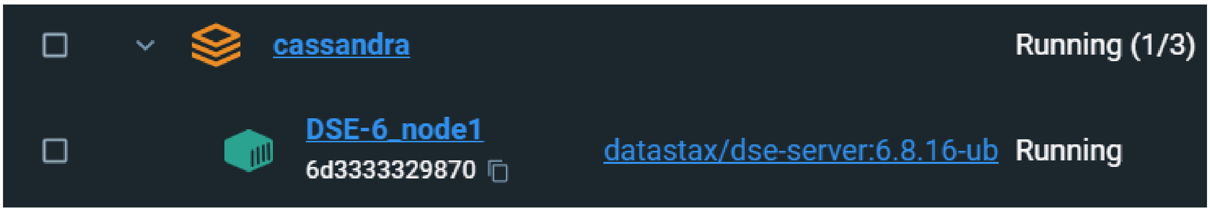
```
cqlsh:musicdb> CREATE TABLE musics_by_genre (
           ...    genre VARCHAR,
           ...    performer VARCHAR,
           ...    year INT,
           ...    title VARCHAR,
           ...    PRIMARY KEY ((genre), performer, year, title)
           ... ) WITH CLUSTERING ORDER BY (performer ASC, year DESC, title ASC);
```

```
cqlsh:musicdb> DESC TABLE musics_by_genre;

CREATE TABLE musicdb.musics_by_genre (
    genre text,
    performer text,
    year int,
    title text,
    PRIMARY KEY (genre, performer, year, title)
) WITH CLUSTERING ORDER BY (performer ASC, year DESC, title ASC)
    AND additional_write_policy = '99PERCENTILE'
    AND bloom_filter_fp_chance = 0.01
    AND caching = {'keys': 'ALL', 'rows_per_partition': 'NONE'}
    AND comment = ''
    AND compaction = {'class': 'org.apache.cassandra.db.compaction.SizeTieredCompactionStrategy', 'max_threshold': '32',
 'min_threshold': '4'}
    AND compression = {'chunk_length_in_kb': '64', 'class': 'org.apache.cassandra.io.compress.LZ4Compressor'}
    AND crc_check_chance = 1.0
    AND default_time_to_live = 0
    AND gc_grace_seconds = 864000
    AND max_index_interval = 2048
    AND memtable_flush_period_in_ms = 0
    AND min_index_interval = 128
    AND nodesync = {'enabled': 'true', 'incremental': 'true'}
    AND read_repair = 'BLOCKING'
    AND speculative_retry = '99PERCENTILE';

cqlsh:musicdb>
```

```
cqlsh:musicdb> INSERT INTO musics_by_genre (genre, performer, year, title) VALUES ('Rock', 'Nirvana', 1991, 'Smells Like
 Teen Spirit');
```

Miramos la tabla con un solo nodo ejecutado, los otros nodos parados.

```
david@LAPTOP-UQ114ETA:~$ docker ps
CONTAINER ID   IMAGE                              COMMAND                  CREATED          STATUS         PORTS
                                                                       NAMES
6d3333329870   datastax/dse-server:6.8.16-ubi7   "/entrypoint.sh dse …"   29 minutes ago   Up 9 minutes   4040/tcp, 5598
-5599/tcp, 7000-7001/tcp, 7077/tcp, 7080-7081/tcp, 7199/tcp, 8090/tcp, 8182/tcp, 8609/tcp, 8983-8984/tcp, 9103/tcp, 9142
/tcp, 9160/tcp, 9999-10000/tcp, 18080/tcp, 0.0.0.0:9042->9042/tcp   DSE-6_node1
```



```
david@LAPTOP-UQ114ETA:~$ docker exec -it DSE-6_node1 bash
dse@node1:~$ cqlsh
Connected to dse51_cluster at 127.0.0.1:9042.
[cqlsh 6.8.0 | DSE 6.8.16 | CQL spec 3.4.5 | DSE protocol v2]
Use HELP for help.
cqlsh> USE musicDb;
cqlsh:musicdb> CONSISTENCY ALL;
```

```
david@LAPTOP-UQ114ETA:~$ docker exec -it DSE-6_node1 bash
dse@node1:~$ cqlsh
Connected to dse51_cluster at 127.0.0.1:9042.
[cqlsh 6.8.0 | DSE 6.8.16 | CQL spec 3.4.5 | DSE protocol v2]
Use HELP for help.
cqlsh> USE musicDb;
cqlsh:musicdb> CONSISTENCY ALL;
Consistency level set to ALL.
cqlsh:musicdb> SELECT * FROM musics_by_genre WHERE genre='Rock';
NoHostAvailable:
cqlsh:musicdb>
```

```
cqlsh:musicdb> CONSISTENCY ONE;
Consistency level set to ONE.
cqlsh:musicdb> SELECT * FROM musics_by_genre WHERE genre='Rock';

 genre | performer | year | title
-------+-----------+------+-------------------------
  Rock |   Nirvana | 1991 | Smells Like Teen Spirit

(1 rows)
cqlsh:musicdb>
```

```
cqlsh:musicdb> exit
dse@node1:~$ exit
exit
```