

## 2) Start up the database engine

```

INFO [main] 2018-05-01 19:56:42,560 StorageService.java:1449 - JOINING: Finish joining ring
INFO [main] 2018-05-01 19:56:42,624 StorageService.java:2292 - Node localhost/127.0.0.1 state jump to NORMAL
INFO [main] 2018-05-01 19:56:42,956 NativeTransportService.java:75 - Netty using Java NIO event loop
INFO [main] 2018-05-01 19:56:43,064 Server.java:155 - Using Netty Version: [netty-buffer=netty-buffer-4.0.44.Final.452812a, netty-codec=netty-codec-4.0.44.Final.452812a, netty-codec-haproxy=netty-codec-haproxy-4.0.44.Final.452812a, netty-codec-http=netty-codec-http-4.0.44.Final.452812a, netty-codec-socks=netty-codec-socks-4.0.44.Final.452812a, netty-common=netty-common-4.0.44.Final.452812a, netty-handler=netty-handler-4.0.44.Final.452812a, netty-tcnative=netty-tcnative-1.1.33.Fork26.142ecbb, netty-transport=netty-transport-4.0.44.Final.452812a, netty-transport-native-epoll=netty-transport-native-epoll-4.0.44.Final.452812a, netty-transport-rxtx=netty-transport-rxtx-4.0.44.Final.452812a, netty-transport-sctp=netty-transport-sctp-4.0.44.Final.452812a, netty-transport-udt=netty-transport-udt-4.0.44.Final.452812a]
INFO [main] 2018-05-01 19:56:43,064 Server.java:156 - Starting listening for CQL clients on localhost/127.0.0.1:9042 (unencrypted)...
INFO [main] 2018-05-01 19:56:43,167 CassandraDaemon.java:529 - Not starting RPC server as requested. Use JMX (StorageService->startRPCServer()) or nodetool (enablethrift) to start it

bin — cqlsh.py — 124x24
Last login: Tue May 1 19:56:18 on ttys000
[User ~]cd Desktop/apache-cassandra-3.11.2/bin/
[User bin]ls
cassandra      cqlsh.py          sstableloader.bat  sstableverify
cassandra.bat   debug-cql        sstablescrub     sstableverify.bat
cassandra.in.bat debug-cql.bat   sstablescrub.bat stop-server
cassandra.in.sh nodetool         sstableupgrade  stop-server.bat
cassandra.ps1    nodetool.bat    sstableupgrade.bat stop-server.ps1
cqlsh           source-conf.ps1  sstableutil
cqlsh.bat       sstableloader   sstableutil.bat

[User bin]./cqlsh
Connected to Test Cluster at 127.0.0.1:9042.
[cqlsh 5.0.1 | Cassandra 3.11.2 | CQL spec 3.4.4 | Native protocol v4]
Use HELP for help.
cqlsh>

```

I run ./Cassandra -f to start the server, and I open up another terminal to run ./cqlsh , both under /bin

## 3) Create a keyspace

```

[cqlsh> CREATE KEYSPACE sample_keyspace22 WITH replication={'class':'SimpleStrategy', 'replication_factor':1};
[cqlsh> DESCRIBE KEYSPACES ;
system_schema  system          system_traces
system_auth     system_distributed sample_keyspace22

```

Comment: I create a keyspace, sample\_keyspace22 with **replication** and **durable\_writes**. And I verify with DESCRIBE command

Use keyspace

```

[cqlsh> USE sample_keyspace22 ;
cqlsh:sample_keyspace22>

```

Comment: I switch into the keyspace by doing USE command

If you want to see all keyspaces in Cassandra

```

[cqlsh:sample_keyspace22> DESCRIBE KEYSPACES ;
system_schema  system          system_traces
system_auth     system_distributed sample_keyspace22
cqlsh:sample_keyspace22>

```

Comment: This command can let you see all keyspaces

4) To create a table

```
[cqlsh:sample_keyspace22> CREATE TABLE sample_keyspace22.user_info ( [           ... email_id text PRIMARY KEY , [           ... first_name text, [           ... last_name text, [           ... object_id uuid, [           ... phone_no text [           ... );
```

Comment: I create a table and define some columns with type

5) Insert a new row

```
[cq]sh:sample_keyspace22> INSERT INTO sample_keyspace22.user_info(email_id, first_name, last_name, object_id, phone_no) values('chch6597@colorado.edu', 'Johnny', 'Cheng', d0b941ea-1efd-365e-a4fb-4c9de7396840, '7203414082');
```

Comment: You can insert values into a column, matching with each property.

If you want to see all column family in Cassandra,

```
[cqlsh:sample_keyspace22> DESCRIBE tables;
```

Comment: Before this command, you need to be inside of one keyspace, and then you can see all column inside of tables. In this case, it's one

Describe a table;

```
[cqlsh:sample_keyspace22> DESCRIBE sample_keyspace22;
   ksName=sample_keyspace22,cfName=user_info,flags=[COMPOUND],params=TableParams
r_chance=0.0, dclct_read_repair_chance=0.1, bloom_filter_fp_chance=0.01, crc_check_chance=1.0, gc_grace_seconds=864000, def
CREATE KEYSPACE sample_keyspace22 WITH replication = {'class': 'SimpleStrategy', 'replication_factor': '1'} AND durable_writes = true;
   _partition' : 'NONE'}, compaction=CompactionParams{class=org.apache.cassandra.db.compaction.SizeTieredCompactionStrategy, opt
CREATE TABLE sample_keyspace22.user_info (
   email_id text PRIMARY KEY, first_name text, last_name text, object_id uuid, phone_no text
) WITH 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 dclct_read_repair_chance = 0.1
   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 read_repair_chance = 0.0
   AND speculative_retry = '99PERCENTILE';
[cqlsh:sample_keyspace22>
```

Comment: You can see a content of a table inside of a keyspace by doing this command

## 6) Create an Index

```
[cqlsh:sample_keyspace22> CREATE INDEX IF NOT EXISTS index_name ON sample_keyspace22.user_info (phone_no);  
[cqlsh:sample_keyspace22>
```

## 7) update a value

```
[cqlsh:sample_keyspace22> CREATE INDEX IF NOT EXISTS index_name ON sample_keyspace22.user_info (phone_no);  
[cqlsh:sample_keyspace22> SELECT * FROM user_info ;  
| email_id | first_name | last_name | object_id | phone_no |  
+-----+-----+-----+-----+-----+  
| chch6597@colorado.edu | Johnny | Handsome | Cheng | d0b941ea-1efd-365e-a4fb-4c9de7396840 | 7203414082 |  
(1 rows)  
[cqlsh:sample_keyspace22> UPDATE sample_keyspace22.user_info SET first_name = 'Handsome Johnny' WHERE email_id = 'chch6597@colorado.edu';  
[cqlsh:sample_keyspace22> SELECT * FROM user_info ;  
| email_id | first_name | last_name | object_id | phone_no |  
+-----+-----+-----+-----+-----+  
| chch6597@colorado.edu | Handsome Johnny | Cheng | d0b941ea-1efd-365e-a4fb-4c9de7396840 | 7203414082 |  
(1 rows)  
[cqlsh:sample_keyspace22>
```

Comment: I update the first name with a new value

## 8) Add a column

```
[cqlsh:sample_keyspace22> ALTER TABLE sample_keyspace22.user_info ADD dob text;  
[cqlsh:sample_keyspace22> SELECT * FROM user_info ;  
| email_id | dob | first_name | last_name | object_id | phone_no |  
+-----+-----+-----+-----+-----+-----+  
| chch6597@colorado.edu | null | Handsome Johnny | Cheng | d0b941ea-1efd-365e-a4fb-4c9de7396840 | 7203414082 |  
(1 rows)  
[cqlsh:sample_keyspace22>
```

Comment: I add a new column called ‘dob’

## 9) Drop a column

```
[cqlsh:sample_keyspace22> ALTER TABLE sample_keyspace22.user_info ADD dob text;  
[cqlsh:sample_keyspace22> SELECT * FROM user_info ;  
| email_id | dob | first_name | last_name | object_id | phone_no |  
+-----+-----+-----+-----+-----+-----+  
| chch6597@colorado.edu | null | Handsome Johnny | Cheng | d0b941ea-1efd-365e-a4fb-4c9de7396840 | 7203414082 |  
(1 rows)  
[cqlsh:sample_keyspace22> ALTER TABLE sample_keyspace22.user_info DROP dob;  
[cqlsh:sample_keyspace22> SELECT * FROM user_info ;  
| email_id | first_name | last_name | object_id | phone_no |  
+-----+-----+-----+-----+-----+-----+  
| chch6597@colorado.edu | Handsome Johnny | Cheng | d0b941ea-1efd-365e-a4fb-4c9de7396840 | 7203414082 |  
(1 rows)  
[cqlsh:sample_keyspace22>
```

Comment: I drop the column ‘dob’

Rename a column: Only primary key column can be renamed

```
[cqlsh:sample_keyspace22> SELECT * FROM user_info ; [org.apache.cassandra.schema.IndexMetadata@325a758e[id=13b8x_name,kind=COMPOSITES,options={target=phone_no}]]]
email_id | first_name | last_name | object_id
+-----+-----+-----+-----+
chch6597@colorado.edu | Handsome Johnny | Cheng | d0b941ea-1efd-365e-a4fb-4c9de7396840 | 7203414082
I dont mind sexual gesture if your my
(1 rows) p
[cqlsh:sample_keyspace22> ALTER TABLE sample_keyspace22.user_info rename email_id to emailId, phone_no to phone_number;
SyntaxException: line 1:66 mismatched input ',' expecting EOF (...user_info rename email_id to emailId[,]...)
[cqlsh:sample_keyspace22> ALTER TABLE sample_keyspace22.user_info rename email_id to emailId;
[cqlsh:sample_keyspace22> ALTER TABLE sample_keyspace22.user_info rename phone_no to phone_number;
InvalidRequest: Error from server: code=2200 [Invalid query] message="Cannot rename non PRIMARY KEY part phone_no"
[cqlsh:sample_keyspace22> SELECT * FROM user_info ;
emailid | first_name | last_name | object_id
+-----+-----+-----+-----+
chch6597@colorado.edu | Handsome Johnny | Cheng | d0b941ea-1efd-365e-a4fb-4c9de7396840 | 7203414082
(1 rows)
cqlsh:sample_keyspace22>
```

I rename the email\_id into emailed. Get rid of '\_'

10) Run a select query

```
[cqlsh:sample_keyspace22> SELECT * FROM user_info ;
emailid | first_name | last_name | object_id
+-----+-----+-----+-----+
chch6597@colorado.edu | Handsome Johnny | Cheng | d0b941ea-1efd-365e-a4fb-4c9de7396840 | 7203414082
(1 rows)
[cqlsh:sample_keyspace22> SELECT * FROM sample_keyspace22.user_info ;
emailid | first_name | last_name | object_id
+-----+-----+-----+-----+
chch6597@colorado.edu | Handsome Johnny | Cheng | d0b941ea-1efd-365e-a4fb-4c9de7396840 | 7203414082
(1 rows)
```

I try to see everything from user\_info

Drop a table

```
[cqlsh:sample_keyspace22> DROP TABLE sample_keyspace22.user_info ;
[cqlsh:sample_keyspace22> SELECT * FROM sample_keyspace22.user_info ;
InvalidRequest: Error from server: code=2200 [Invalid query] message="unconfigured table user_info"
cqlsh:sample_keyspace22>
```

After I drop a table, the table is no longer existed

Drop a keyspace

```
[cqlsh:sample_keyspace22> DESCRIBE KEYSPACES ; options={max_threshold=1000, extensions={}, cdc=false}, comparator=comparator(), system_schema system_traces, system_auth drop system_distributed . sample_keyspace22fer [pos=0 lim=3 dTime=1524511053021000}], triggers=[], indexes=[org.apache.cassandra.index.SecondaryIndex@f97cf3f5, org.apache.cassandra.index.SecondaryIndex@f97cf3f5, org.apache.cassandra.index.SecondaryIndex@f97cf3f5],  
[cqlsh:sample_keyspace22> DROP KEYSPACE sample_keyspace22 ;  
[cqlsh:sample_keyspace22> DESCRIBE KEYSPACES ;4-23 13:32:59,488 Migration  
F0 [Native-Transport-Requests-1] 2018-04-23 13:38:42,125 Migration  
system_schema system_auth system system_distributed system_traces  
cqlsh:sample_keyspace22> connect to each other.
```

After dropping the keyspace, it's no longer in keyspace. You can compare with the first picture