

What are counters?

The counter type is used to define counter columns(column data type). A counter column is a column whose value is a 64-bit signed integer and on which 2 operations are supported: incrementing and decrementing

What is 64-bit signed integer?

A 64-bit signed integer is a data type that can hold integer values ranging from -9,223,372,036,854,775,808 to 9,223,372,036,854,775,807. It uses 64 bits of memory to represent the value, with one bit reserved for the sign (positive or negative) and the remaining 63 bits used to store the magnitude of the number.

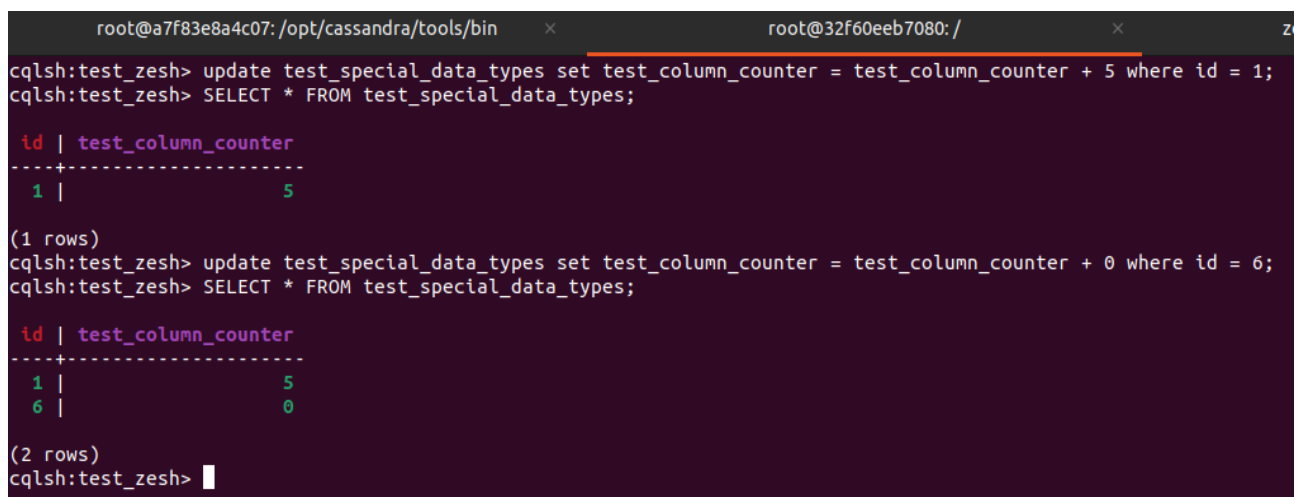
How to implement counters?

Here is an example of how you can create counter data type onto a column.

Counter Example

Allow queries for number of videos there are per tag

```
CREATE TABLE moo_counts (  
    cow_name text,  
    moo_count counter,  
    PRIMARY KEY((cow_name))  
);  
  
UPDATE moo_counts  
SET moo_count = moo_count + 8  
WHERE cow_name = 'Betsy';
```



The screenshot shows a terminal window with two tabs. The active tab is titled 'root@32f60eeb7080: /'. The terminal displays the following commands and output:

```
cqlsh:test_zesh> update test_special_data_types set test_column_counter = test_column_counter + 5 where id = 1;  
cqlsh:test_zesh> SELECT * FROM test_special_data_types;  
  
id | test_column_counter  
-----  
1 | 5  
  
(1 rows)  
cqlsh:test_zesh> update test_special_data_types set test_column_counter = test_column_counter + 0 where id = 6;  
cqlsh:test_zesh> SELECT * FROM test_special_data_types;  
  
id | test_column_counter  
-----  
1 | 5  
6 | 0  
  
(2 rows)  
cqlsh:test_zesh> 
```

Counter column limitations on table:

1. They cannot be used for columns part of the PRIMARY KEY of a table.
2. Tables with counters must have all columns as counters or none at all
3. Counters do not support expiration
4. Counter updates are, by nature, not idempotent. An important consequence is that if a counter update fails unexpectedly (timeout or loss of connection to the coordinator node), the client has no way to know if the update has been applied or not. In particular, replaying the update may or may not lead to an over count.