

READY



```
%sh
STATUS="$(service cassandra status)"

if [[ $STATUS == *"is running"* ]]; then
    echo "Cassandra is running"
else
    echo "Cassandra not running .... Starting"
    service cassandra restart > /dev/null 2>&1 &
    echo "Started"
fi
```

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## Exercise 6 – Ring

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In this exercise, you will:

- Understand the Apache Cassandra™ token ring

One of the secrets to Apache Cassandra's™ performance is the use of a ring that keeps track of tokens. This ring enables Apache Cassandra™ to know exactly which nodes contain which partitions. The ring also eliminates any single points of failure.

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Run the nodetool status command to verify the node is working properly.

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```
%sh
nodetool status
```

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The UN indicates UP NORMAL meaning the node is ready to go. Load indicates current disk space usage. Owns indicates how many tokens this node is responsible for (it is the only node in the ring at the moment). Token should be (the same value set in the cassandra.yaml file).

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## 06\_Ring\_Solution

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Now let's recreate the two tables we made in previous exercises and import their data.  
Start cqlsh and execute the commands that follow:

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```
%cassandra
CREATE KEYSPACE IF NOT EXISTS YooToob
WITH replication = {'class': 'SimpleStrategy',
'replication_factor': 1 };
```

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```
USE YooToob;

CREATE TABLE videos (
id uuid,
added_date timestamp,
title text,
PRIMARY KEY ((id))
);

CREATE TABLE videos_by_tag (
tag text,
video_id uuid,
added_date timestamp,
title text,
PRIMARY KEY ((tag), added_date, video_id))
WITH CLUSTERING ORDER BY(added_date DESC);
```

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```
USE YooToob;

INSERT INTO videos_by_tag(tag, video_id, added_date, title)
VALUES ('cassandra', 1645ea59-14bd-11e5-a993-8138354b7e31, '2014-01-29', 'Cassandra History');

INSERT INTO videos_by_tag(tag, video_id, added_date, title)
VALUES ('cassandra', 245e8024-14bd-11e5-9743-8238356b7e32, '2012-04-03', 'Cassandra & SSDs');

INSERT INTO videos_by_tag(tag, video_id, added_date, title)
VALUES ('cassandra', 3452f7de-14bd-11e5-855e-8738355b7e3a, '2013-03-17', 'Cassandra Intro');

INSERT INTO videos_by_tag(tag, video_id, added_date, title)
VALUES ('fenago', 4845ed97-14bd-11e5-8a40-8338255b7e33, '2013-10-16', 'Apache Cassandra');

INSERT INTO videos_by_tag(tag, video_id, added_date, title)
VALUES ('fenago', 5645f8bd-14bd-11e5-af1a-8638355b8e3a, '2013-04-16', 'What is Apache Cassandra?')
```

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```
SELECT token(tag), tag
FROM videos_by_tag;
```

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## 06: Ring Solution

How many partitions are there?  
On which node does each partition reside?

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```
SELECT *  
FROM videos_by_tag;
```

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You can refresh your memory as to which nodes own which token ranges by running the following in the terminal:

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```
%sh  
nodetool ring
```

ERROR

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You can further prove partition resides on the node by executing the following nodetool commands in the terminal:

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```
%sh  
nodetool getendpoints yootoob videos_by_tag 'cassandra'
```

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```
%sh  
nodetool getendpoints yootoob videos_by_tag 'fenago'
```

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getendpoints returns the IP addresses of the node(s) which store the partitions with the respective partition key value (the last argument in single quotes: cassandra and datastax respectively). Notice we must also supply the keyspace and table name we are interested in since we set replication on a per-keyspace basis. There is more on replication to come later in this course.

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