Containerization and Big Data: Exercise 3-2

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3 Multi-Container Apps on multi-node with Swarm

3.6 Preparing virtual Nodes with Docker Machine

```
Waiting for machine to be running, this may take a few minutes...

Detecting operating system of created instance...

Waiting for SSH to be available...

Detecting the provisioner...

Provisioning with boot2docker...

Copying certs to the local machine directory...

Copying certs to the local machine directory...

Setting Docker configuration on the remote daemon...

Setting Docker configuration to Docker...

Docker is up and running!

To see how to connect your Docker Client to the Docker Engine running on this virtual machine, run: docker-
machine env wm03

Dhosl2@us20041s:.-$ docker-machine 1s

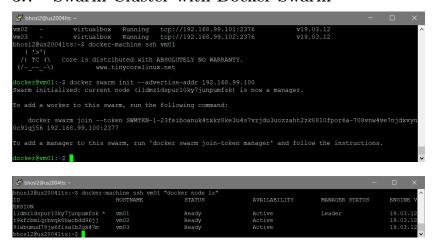
NAME ACTIVE DRIVER STATE URL SWARM DOCKER ERRORS

Vm01 - virtualbox Running tcp://192.168.99.100:2376 v19.03.12

vm02 - virtualbox Running tcp://192.168.99.101.2376 v19.03.12

vm03 - virtualbox Running tcp://192.168.99.102.2376 v19.03.12
```

3.7 Swarm Cluster with Docker Swarm



3.8 Build Cassandra Cluster

```
version: "3.7"
services:
 # Node01
 cassandra01:
   image: cassandra:3.11
   environment:
     CASSANDRA_BROADCAST_ADDRESS: "cassandra01"
   deploy:
     restart_policy:
       condition: on-failure
      max_attempts: 3
       window: 120s
     placement:
       constraints:
         - node.hostname == vm01
   ports:
      - 9042
   volumes:
     - cass-data:/var/lib/cassandra
   networks:
     - cass-net
 # Node02
 cassandra02:
   image: cassandra:3.11
```

```
environment:
     CASSANDRA_BROADCAST_ADDRESS: "cassandra02"
     CASSANDRA_SEEDS: "cassandra01"
   depends_on:
      - cassandra-1
   deploy:
     restart_policy:
       condition: on-failure
       max_attempts: 3
       window: 120s
     placement:
       constraints:
         - node.hostname == vm02
   volumes:
     - cass-data:/var/lib/cassandra
   networks:
     - cass-net
 # Node03
 cassandra03:
   image: cassandra:3.11
   environment:
     CASSANDRA_BROADCAST_ADDRESS: "cassandra03"
     CASSANDRA_SEEDS: "cassandra01"
   depends_on:
      - cassandra-1
   deploy:
     restart_policy:
       condition: on-failure
       max_attempts: 3
       window: 120s
     placement:
       constraints:
         - node.hostname == vm03
     - cass-data:/var/lib/cassandra
   networks:
     - cass-net
networks:
 cass-net:
volumes:
 cass-data:
```

```
docker@vm01:-/casscluster$ vi docker-compose.yml
docker@vm01:-/casscluster$ docker stack deploy --compose-file docker-compose.yml casscluster
Creating network casscluster_cassandra03
Creating service casscluster_cassandra03
Creating service casscluster_cassandra01
Creating service casscluster_cassandra02
docker@vm01:-/casscluster$ docker stack 1s
NAMB SERVICES ORCHESTRATOR
casscluster 3 Swarm
docker@vm01:-/casscluster$
```

₿ bhosl2@us2004lts: -	•				- 🗆 X
docker@vm01:~/cas	sscluster\$ docker stack ps ca	sscluster			
ID S	NAME	IMAGE			CURRENT STATE
tnup4i61sxbm		cassandra:3.11	vm02		Running about a minute a
f61fd3y492s6	casscluster cassandra03.1	cassandra:3.11	Vm03		Running about a minute a
4xrxr4chqun9	casscluster cassandra02.1		vm02	Shutdown	Failed about a minute ag
e266oopm60hn	casscluster cassandra01.1	cassandra:3.11	vm01		Running 2 minutes ago
xct3u5t6lxsq				Shutdown	Failed about a minute ag
iocker@vm01:~/ca:		ces casscluster			
	NAME			IMAGE	PORTS
mgwgruljum7p		replicated		cassandra:3.11	
puf8iwsx0ozs	casscluster cassandra03	replicated			
yom7hjv60xr9	casscluster cassandra01	replicated		cassandra:3.11	*:30000->9042/tcp
docker@vm01:~/ca:					
	HOSTNAME	STATUS	AVAILABILITY	MANAGER STATUS	ENGINE VERSION
ildmzldspurl0ky7junpumfsk * vm01		Ready		Leader	19.03.12
t9kfcbmiqrbvqk8hwcbdd96jj vm02		Ready			19.03.12
91wbumud79jw6fisw1b2gx47m vm03		Ready			19.03.12
docker@vm01:~/cas	sscluster\$				