

Clustering with Swarm

Objectives

We are going to learn ,

- What is Swarm
- How to launch a 3 node Swarm Cluster

Docker Swarm

- Native Docker Clustering Tool
- Similar to
 - Kubernetes
 - Mesosphere
- Clusters multiple hardware hosts to form a single logical entity to provision containers on.

Compatibility

- To docker client, swarm appears as a single docker daemon to connect to and run containers on
- Any tool which works with docker daemon on single host, can transparently work with docker swarm

Group Exercise

We are now going to form a swarm cluster
with 3 docker hosts

Steps

- Generate Discovery Token for Swarm Cluster
- Create Swarm Master
- Create Swarm Nodes, add them to the cluster
- Validate
- Launch Containers on Swarm Cluster

Discovery Tokens

- Each Swarm Cluster uses a unique string as a discovery token.
- Using this token, nodes can join a specific swarm cluster.

Create a Discovery Token

- Run the following command on the existing docker host (default)

```
$ docker run swarm create  
[output is token id ]
```

- Note down the token id created above. This is the discovery token.

Create Swarm Master

```
$ docker-machine create \
  -d virtualbox \
  --swarm --swarm-master \
  --swarm-discovery token://<TOKEN_ID_HERE> \
  swarm-master
```


Add 1st Node

```
$ docker-machine create \
-d virtualbox \
--swarm \
--swarm-discovery token://<TOKEN_ID_HERE> \
swarm-node-00
```


Add 2nd Node

```
$ docker-machine create \  
-d virtualbox \  
--swarm \  
--swarm-discovery token://<TOKEN_ID_HERE> \  
swarm-node-01
```


Validate

- On your Windows / Mac Host run the following

```
$docker-machine ls
```

- This should show three nodes in your swarm cluster with their status

[Windows Specific]

If above command does not work on windows, and it keeps showing "timeout" use the following instead

```
$ docker-machine --native-ssh ls
```


Configure Docker Client

- We need to configure our docker client to connect to swarm cluster instead of the default docker machine.

- On OS X

```
$ docker-machine env --swarm swarm-master
```

```
$ eval "$$(docker-machine env --swarm swarm-master)"
```

- On Windows

```
$ docker-machine env --swarm --shell cmd swarm-master
```


Validate

```
$ docker info
```


Smoke Test

```
$ docker run -d busybox
```

```
$ docker info
```

[Launch a few containers with busybox and check which host it gets scheduled on by running docker info]