### Swarm Stacks

Stacks allow us to use docker-compose.yaml files with a swarm.

However certain instructions that we have been using are deprecated, for instance

Build:

container-name

A ‘stack’ refers to a collection of services maintained within a swarm, stacks are groups of related services that can be orchestrated and scaled together. These services can be interacted with individually using the swarm commands we have looked at previously. For instance, if a service is spun up as part of a stack with 5 replicas, we can use the command:

*docker service update –replicas 10 python-http-server*

To create 5 more replicas, all managed in the swarm by the manager node.

### Stack Commands

*docker stack deploy --compose-file docker-compose.yaml stackdemo*

This command will create a stack of services based on the services described in the docker-compose.yaml.

*docker stack services stackdemo*

This command will provide information about the services that exist within the stack, including mode, replicas and Image.

*docker stack rm stackdemo*

This command will spin down all the services within the targeted stack.

Because the stack contains services, we can use our service commands on these individual services.

### Concepts of Note

Because we cannot use the Build instruction in a docker-compose file we need to make use of a local registry to store our images.

This registry must exist as a service managed by the cluster, allowing all nodes access to it.

We should tag our images similar to the below:

*127.0.0.1:5000/client*

You need to then push these images, storing them in the local registry, so that the nodes in the cluster can access and use them for the tasks that they are assigned.

### Tasks

1. Complete the tutorial in the docker documentation below:

* + https://docs.docker.com/engine/swarm/stack-deploy/

2. Deploy the quad application we have previously worked on as part of a swarm **WITHOUT** Jenkins.

3. Deploy the quad application we have previously worked on as part of a swarm **WITH** Jenkins.

\*\*Can you get it so that the mongo-seed container is only deployed once?\*\*