

Docker Swarm Cheat Sheet

by Gaurav Pandey (gauravpandey44) via cheatography.com/69622/cs/20590/

Basic

Swarm is Docker's in built containers orchestrator solution, its main purpose is to manage containers in a computer cluster, i.e. a set of connected computers that work together.

Swarm comes built into the Docker Engine, you don't need to install anything to get started.

In Docker, there are many layers of encapsulation: the OS kernel, containers, tasks that encapsulate containers as units of work, services or Pods that represent application components, and stacks-(collection of services) that represent full applications.

| docker swarm commands | |
|--|--|
| docker swarm init | Initialize a swarm |
| docker swarm jointoken <manager-token> 10.1.0.2:2377</manager-token> | Join an existing swarm as manager node |
| docker swarm jointoken <worker-tok- en> 10.1.0.2:2377</worker-tok- | Join a swarm as a worker node |
| docker swarm leave | Leave the swarm |

| docker stack com | mands |
|--|--|
| docker stack deploy nodeapp -c docker-com- pose.yml | deploy the stack using docker-compose file , Swarm does not support the build option if defined in the Compose file(but docker compose up uses it). |
| docker stack Is | shows all stacks along with list of services in the stack |
| docker stack services <st- ack-name></st- | list the services in the stack. |
| docker stack ps <stack-name></stack-name> | list all the tasks in the stack. |
| docker stack rm | removes the stack. |

Manage Docker stacks(is a collection of services that make up an application in a specific environment).

| docker service commands | |
|--|--|
| docker service createreplicas 5 -p 80:80name web nginx | create docker service directly (similar to docker run command) |
| docker service logs [OPTIONS] SERVICE TASK | Fetch the logs of a service or task, in option you can use -f,d-etails etc |
| docker service Is | list all the services |
| docker service ps [OPTIONS] SERVICE [SERVICE] | List the tasks of one or more services |
| docker service rm SERVICE [SERVICE] | Remove one or more services |
| docker service scale SERVIC- E=REPLICAS [SERVICE=REP- LICAS] | Scale one or multiple replicated services |
| docker service update [OPTIONS] SERVICE | Update a service |
| Manage services. Services in the s | swarm mode are actually object |

Manage services. Services in the swarm mode are actually object (when compared to the docker compose services where they are actual running services)

| docker node commands | |
|--------------------------------------|---|
| docker node Is | List nodes in the swarm |
| docker node ps | List tasks running on one or more nodes, defaults to current node |
| docker node rm [OPTIONS] NODE [NODE] | Remove one or more nodes from the swarm |
| docker node demote NODE [NODE] | Demote one or more nodes from manager in the swarm |
| docker node promote NODE [NODE] | Promote one or more nodes to manager in the swarm |



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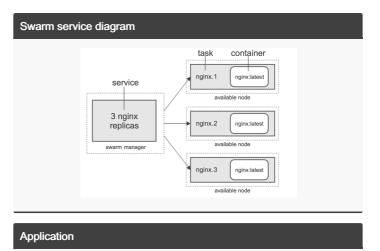


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| Common Terms/Key concepts | | |
|---------------------------|---|--|
| Node | is a physical or virtual machine (running an instance of the Docker Engine.) | |
| Manager nodes | perform swarm management and orchestration duties. By default manager nodes are also worker nodes. | |
| Worker nodes | execute tasks. | |
| Cluster | one or more nodes grouped together. | |
| Swarm | is a type of cluster in docker terminology. | |
| Docker Swarm | (not part of docker engine)is a separate product which you can use to cluster multiple Docker hosts. Prior to Docker version 1.12 it was the only native Docker option for clustering hosts, and it needed a lot of additional setup for distributed state, service discovery and security. | |
| Swarm Mode | With Docker 1.12,(is built into Docker Engine) To run a cluster you just need to install Docker on multiple machines, run docker swarm init to switch to Swarm Mode and docker swarm join to add more nodes to the cluster. State, discovery and security are all included with zero setup. | |
| Stack | is a collection of services that make up an application in a specific environment. | |
| service | it defines the blueprint about which image to use and which commands to execute,ports,networks,replicas,etc inside future running containers. | |
| task | in swarm model,task is actually invoked inside a container. When service is created the swarm manager starts a | |

task(or its replicas) inside various containers.





similar commands

Init host as a swarm manager node:

docker swarm init

Deploy applic ation

docker stack deploy -c docker -co mpo se.yml myApp

List services:

docker service ls

docker stack services myApp

List tasks:

docker service ps myApp_web
docker container ls -q

docker stack ps myApp

Stop applic ation

docker stack rm myApp

Take down swarm

docker swarm leave --force



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