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Create Docker Swarm Cluster

1. Initialize the swarm using the command
   `$ docker swarm init`
   Now run the command shown in the output in the other terminal to appoint it as a worker.

```
Terminal Host 1 +
Your Interactive Bash Terminal. A safe place to learn and execute commands.

$ docker swarm init
Swarm initialized: current node (oi5rgao0a45pu7to82bycluka) is now a manager.

To add a worker to this swarm, run the following command:

    docker swarm join --token SWMTKN-1-46n8yuxvgnxjmtnjqqg8hbgk4rcw7qfllroei1x8g
0ok6ipyl7-cysbtxyugqy3kdkuujufnjkv5 172.17.0.22:2377

To add a manager to this swarm, run 'docker swarm join-token manager' and follow
 the instructions.

$
```

2. Run the command
   `$ docker node ls`
   in the master node to view all the nodes in the swarm.

```
$ docker node ls
ID                          HOSTNAME        STATUS          AVAILABILI
TY        MANAGER STATUS    ENGINE VERSION
oi5rgao0a45pu7to82bycluka *  host01          Ready           Active
        Leader            19.03.13
fbqabm4ksvq03gx3p7owpcsjg    host02          Ready           Active
                          19.03.13
$ 
Terminal Host 2
Your Interactive Bash Terminal. A safe place to learn and execute commands.

$ token=$(ssh -o StrictHostKeyChecking=no 172.17.0.22 "docker swarm join-token -q worker") && echo $token
Warning: Permanently added '172.17.0.22' (ECDSA) to the list of known hosts.
SWMTKN-1-46n8yuxvgnxjmtnjqqg8hbgk4rcw7qfllroei1x8g0ok6ipyl7-cysbtxyugqy3kdkuujufnjkv5
$ docker swarm join 172.17.0.22:2377 --token $token
This node joined a swarm as a worker.
$
```

3. Now create a network named Skynet using the command
   `$ docker network create -d overlay skynet`
   and list all the available networks using the command
   `$ docker network ls`.

```
$ docker network create -d overlay skynet
lsae2nftdcxst1bphuqz21wg0
```

```
$ docker network create -d overlay skynet
lsae2nftdcxst1bphuqz21wg0
$ docker service create --name http --network skynet --replicas 2 -p 80:80 katac
oda/docker-http-server
v25ddfsi28d5lyg5km0zoo4mx
overall progress: 2 out of 2 tasks
1/2: running   [==========================================>]
2/2: running   [==========================================>]
verify: Service converged
```

Check and list the services using the command

`$docker services ls`

As of now, there aren't any services available so the command doesn't have any listing.

```
$ docker service ls
ID                  NAME                MODE                REPLICAS
IMAGE                                   PORTS
v25ddfsi28d5        http                replicated          2/2
katacoda/docker-http-server:latest      *:80->80/tcp
```

4. Use the command
   `$ docker service create --name http --network skynet --replicas 2 -p 80:80 katacoda/docker-http-server`
   here we are creating 2 replicas and assigning them to the nodes.

```
$ docker network create -d overlay skynet
lsae2nftdcxst1bphuqz21wg0
$ docker service create --name http --network skynet --replicas 2 -p 80:80 katac
oda/docker-http-server
v25ddfsi28d5lyg5km0zoo4mx
overall progress: 2 out of 2 tasks
1/2: running   [==========================================>]
2/2: running   [==========================================>]
verify: Service converged
```

5. Once the service creation is complete, run the command
   `$ docker service ls`
   to list the recently created service.

```
$ docker ps
CONTAINER ID        IMAGE                                       COMMAND             CRE
ATED                STATUS              PORTS                   NAMES
7afc40fbc8e5        katacoda/docker-http-server:latest    "/app"              Abo
ut a minute ago   Up About a minute   80/tcp                  http.2.nrjy2p8c3qwm3m0
msbtkd6l00
```

Terminal Host 2

```
$ token=$(ssh -o StrictHostKeyChecking=no 172.17.0.22 "docker swarm join-token -q worker") && echo $tok
Warning: Permanently added '172.17.0.22' (ECDSA) to the list of known hosts.
SWMTKN-1-46n8yuxvgnxjmtnjqqg8hbgk4rcw7qfllroei1x8g0ok6ipyl7-cysbtxyugqy3kdkuujufnjkv5
$ docker swarm join 172.17.0.22:2377 --token $token
This node joined a swarm as a worker.
$ docker ps
CONTAINER ID         IMAGE                               COMMAND         CREATED            STATU
      PORTS                 NAMES
746e00b5bdee         katacoda/docker-http-server:latest  "/app"          About a minute ago  Up Ab
ute    80/tcp                http.1.sx2wcvn8adxf24lg6jz7unheh
$
```