

Orquestación con Docker Swarm

Arturo Silvelo

Try New Roads

Ejemplo 1: Creación del entorno

- Crear red para los nodos

```
docker network create --driver bridge swarm-net
```

- Crear manager

```
docker run -d --privileged --name swarm-manager \  
--hostname swarm-manager \  
--network swarm-net \  
-p 2377:2377 \  
-p 7946:7946 \  
-p 4789:4789 \  
-p 3000:3000 \  
-p 80:80 \  
-p 8080:8080 \  
docker:dind
```

- Iniciar el swarm

```
docker exec -it swarm-manager docker swarm init --advertise-addr eth0
```

- Obtener token

```
docker exec swarm-manager docker swarm join-token worker -q
```

- Crear nodos

```
docker run -d --privileged --name swarm-worker1 \  
  --hostname swarm-worker1 \  
  --network swarm-net \  
  docker:dind
```

```
docker run -d --privileged --name swarm-worker2 \  
  --hostname swarm-worker2 \  
  --network swarm-net \  
  docker:dind
```

- Añadir nodos al swarm

```
docker exec swarm-worker1 docker swarm join --token $TOKEN swarm-manager:2377  
docker exec swarm-worker2 docker swarm join --token $TOKEN swarm-manager:2377
```

- Mostrar nodos

```
docker exec swarm-manager docker node ls
```

- Limpiar swarm

```
docker stop swarm-manager swarm-worker1 swarm-worker2  
docker rm swarm-manager swarm-worker1 swarm-worker2  
docker network rm swarm-net
```

Ejemplo 2: Uso de docker swarm

- Crear un servicio nginx

```
docker exec swarm-manager docker service create --name web --replicas 3 -p 80:80 nginx
```

- Listar Servicios

```
docker exec swarm-manager docker service ls
```

- Contenedores de un servicio

```
docker exec swarm-manager docker service ps web
```

- Escalar replicas

```
docker exec swarm-manager docker service scale web=6
docker exec swarm-manager docker service ps web
```

- Simulación fallo

```
docker pause swarm-worker1
docker exec swarm-manager docker node ls
```

ID	HOSTNAME	STATUS	AVAILABILITY	MANAGER STATUS	ENGINE VERSION
ksvdv6eycpata7sjqr20z75g0 *	swarm-manager	Ready	Active	Leader	28.3.3
waeftnwnr9n48zex5qu8ni2ti	swarm-worker1	Down	Active		28.3.3
n40y7n14f892yn2e7omibf6sy	swarm-worker2	Ready	Active		28.3.3

- Recuperación

```
docker unpause swarm-worker1  
docker exec swarm-manager docker service ps web
```

- Balancear servicios

```
docker exec swarm-manager docker service scale web=0  
docker exec swarm-manager docker service scale web=6  
docker exec swarm-manager docker service ps web
```

Ejemplo 3: Stacks

- Desplegar docker

```
docker cp ejemplos/2.servicio/docker-compose.yaml swarm-manager:/docker-compose.yaml  
docker exec swarm-manager docker stack deploy -c docker-compose.yaml base
```

- Comprobar servicio

```
docker exec swarm-manager docker stack ls  
docker exec swarm-manager docker stack ps base  
docker exec swarm-manager docker service ps base_app
```

- Escalar Servicio

```
docker exec swarm-manager docker service scale base_app=4
```

Ejemplo 4: Secretos

- Crear Secreto

```
docker cp ejemplos/3.secretos/secret.txt swarm-manager:/secret.txt  
docker exec swarm-manager docker secret create secret.txt /secret.txt
```

- Desplegar stack

```
docker cp ejemplos/3.secretos/docker-compose.yaml swarm-manager:/docker-compose-secrets.yaml  
docker exec swarm-manager docker stack deploy -c docker-compose-secrets.yaml base-secret
```