

1. Create a Docker swarm cluster with 3 nodes
2. Deploy an Apache container with 4 replicas

ON MASTER:

Install docker

sudo yum install -y docker

sudo systemctl enable docker

sudo systemctl start docker

sudo systemctl status docker

docker swarm init --advertise-addr=172.31.23.77 (private ip)

```
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Jan 31 12:24:33 ip-172-31-23-77.ec2.internal systemd[1]: Starting docker.service - Docker Application Container Engine...
Jan 31 12:24:33 ip-172-31-23-77.ec2.internal dockerd[26886]: time="2024-01-31T12:24:33.801348940Z" level=info msg="Starting up"
Jan 31 12:24:33 ip-172-31-23-77.ec2.internal dockerd[26886]: time="2024-01-31T12:24:33.861334863Z" level=info msg="Loading containers: s
Jan 31 12:24:34 ip-172-31-23-77.ec2.internal dockerd[26886]: time="2024-01-31T12:24:34.375229457Z" level=info msg="Loading containers: d>
Jan 31 12:24:34 ip-172-31-23-77.ec2.internal dockerd[26886]: time="2024-01-31T12:24:34.434629231Z" level=info msg="Docker daemon" commit>
Jan 31 12:24:34 ip-172-31-23-77.ec2.internal dockerd[26886]: time="2024-01-31T12:24:34.435085669Z" level=info msg="Daemon has completed >
Jan 31 12:24:34 ip-172-31-23-77.ec2.internal dockerd[26886]: time="2024-01-31T12:24:34.478618108Z" level=info msg="API listen on /run/do>
Jan 31 12:24:34 ip-172-31-23-77.ec2.internal systemd[1]: Started docker.service - Docker Application Container Engine.
lines 1-22/22 (END)
^C
[ec2-user@ip-172-31-23-77 ~]$ docker swarm init --advertise-addr=172.31.23.77
permission denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Post "http://%2Fvar%2Frun%2Fdocker.
sock/v1.24/swarm/init": dial unix /var/run/docker.sock: connect: permission denied
[ec2-user@ip-172-31-23-77 ~]$ sudo docker swarm init --advertise-addr=172.31.23.77
Swarm initialized: current node (4rtusa8iez14niyyodav36f7a) is now a manager.

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

    docker swarm join --token SWMTKN-1-0vhs59qzkd4amhd3nutjqzlb9tan49g624biduhn3lc3d744g-4d1y1u83nblrr7shlk29i3yrx 172.31.23.77:2377

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

[ec2-user@ip-172-31-23-77 ~]$
```

i-022dc3c7a5a32ca23 (main)

PublicIPs: 54.172.136.126 PrivateIPs: 172.31.23.77

sudo docker node ls

```
[ec2-user@ip-172-31-23-77 ~]$ sudo docker node ls
ID                                HOSTNAME                                STATUS    AVAILABILITY    MANAGER STATUS    ENGINE VERSION
pcu4lrwriwsremg3jy0ohk8xo       ip-172-31-20-181.ec2.internal          Ready    Active           Active             24.0.5
5mkbxw7jmdr4801gcuvhaxjyo       ip-172-31-23-31.ec2.internal           Ready    Active           Active             24.0.5
4rtusa8iez14niyyodav36f7a *     ip-172-31-23-77.ec2.internal           Ready    Active           Leader             24.0.5
[ec2-user@ip-172-31-23-77 ~]$
```

i-022dc3c7a5a32ca23 (main)

PublicIPs: 54.172.136.126 PrivateIPs: 172.31.23.77

sudo docker service create --name apache --replicas 4 -p 80:80 httpd

```
[ec2-user@ip-172-31-23-77 ~]$ sudo docker service create --name apache --replicas 4 -p 80:80 httpd
mwk1rg7vm4jmgncw40vcoip62
overall progress: 4 out of 4 tasks
1/4: running [=====>]
2/4: running [=====>]
3/4: running [=====>]
4/4: running [=====>]
verify: Service converged
[ec2-user@ip-172-31-23-77 ~]$
```

i-022dc3c7a5a32ca23 (main)

PublicIPs: 54.172.136.126 PrivateIPs: 172.31.23.77

sudo docker ps

```
[ec2-user@ip-172-31-23-77 ~]$ sudo docker ps
CONTAINER ID   IMAGE      COMMAND                  CREATED        STATUS        PORTS        NAMES
0232982ab131   httpd:latest "httpd-foreground"      6 minutes ago Up 6 minutes  80/tcp       apache.1.wdns8vlrpd7kh8ldsvaljo7cq
[ec2-user@ip-172-31-23-77 ~]$
```

i-022dc3c7a5a32ca23 (main)

PublicIPs: 54.172.136.126 PrivateIPs: 172.31.23.77

ON SLAVE:

Install docker

sudo yum install -y docker

sudo systemctl enable docker

sudo systemctl start docker

sudo systemctl status docker

sudo docker swarm join --token SWMTKN-1-

0vhs59qzkd4amhd3nutjqzlb9tan49g624biduhn31c3d744g-4d1ylu83nblrr7shlk29i3yrx

172.31.23.77:2377

SLAVE 1

sudo docker ps

| CONTAINER ID | IMAGE        | COMMAND            | CREATED       | STATUS       | PORTS  | NAMES                              |
|--------------|--------------|--------------------|---------------|--------------|--------|------------------------------------|
| ff7c229ffdc  | httpd:latest | "httpd-foreground" | 6 minutes ago | Up 6 minutes | 80/tcp | apache.2.nohmroqlcw7ng60ikldwwq0v2 |
| 8ffa29036b29 | httpd:latest | "httpd-foreground" | 6 minutes ago | Up 6 minutes | 80/tcp | apache.3.be6koaz39bd755i4poilgw411 |

ec2-user@ip-172-31-23-31 ~]\$

I-095020cc44bc32bc4 (other1)

PublicIPs: 54.152.139.84 PrivateIPs: 172.31.23.31

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SLAVE 2

| CONTAINER ID | IMAGE        | COMMAND            | CREATED       | STATUS       | PORTS  | NAMES                              |
|--------------|--------------|--------------------|---------------|--------------|--------|------------------------------------|
| ee0e90477a45 | httpd:latest | "httpd-foreground" | 6 minutes ago | Up 6 minutes | 80/tcp | apache.4.shljowjwanb2o9azafwswj72s |

ec2-user@ip-172-31-20-181 ~]\$ sudo docker ps

ec2-user@ip-172-31-20-181 ~]\$

I-08ee9f7a4372dd96d (other2)

PublicIPs: 54.167.6.93 PrivateIPs: 172.31.20.181

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