

DOCKER NETWORKS / DOCKER SWARM

Step1: create the amazon linux and connect.

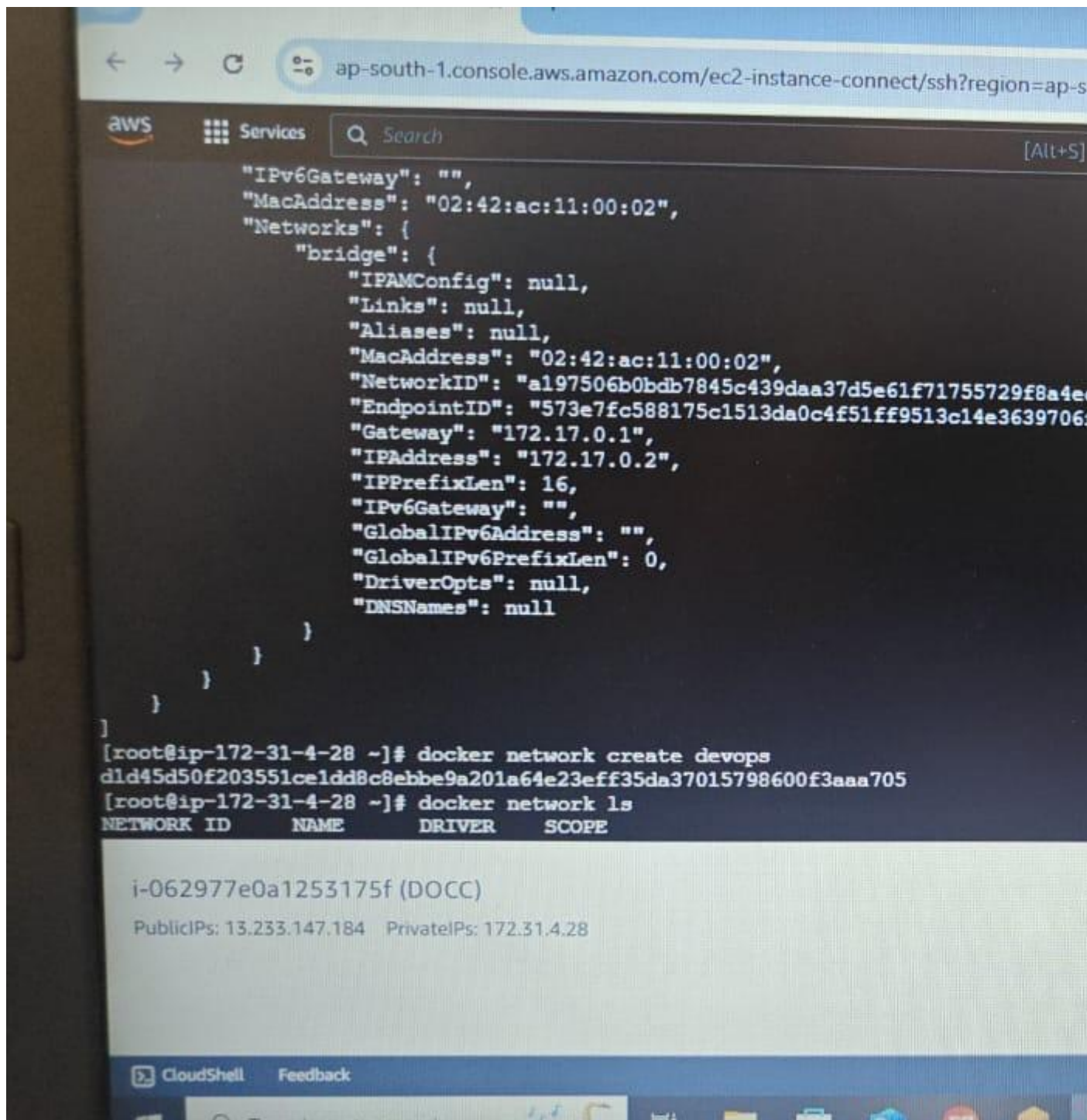
```
sudo su -
```

```
yum install docker -y
```

```
systemctl start docker
```

```
docker network ls ( list the network)
```

Bridge is a default network



docker run -it Ubuntu

||

ctrl p q

docker
ps

```
aws Services Search [Alt+S]
containerd-1.7.22-1.amzn2023.0.2.x86_64
iptables-nft-1.8.8-3.amzn2023.0.2.x86_64
libnftnl-1.0.1-19.amzn2023.0.2.x86_64
runc-1.1.14-1.amzn2023.0.1.x86_64
docker-25.0.6-1.amzn2023.0
libcgroup-3.0-1.amzn2023.0
libnftnl-1.2.2-2.amzn2023.0

Complete!
[root@ip-172-31-4-28 ~]# systemctl start docker
d[root@ip-172-31-4-28 ~]# docker network ls
NETWORK ID      NAME      DRIVER      SCOPE
a197506b0bdb    bridge   bridge      local
24f2e269c582    host     host        local
63f23ff9c800    none     null        local
[root@ip-172-31-4-28 ~]# docker run -it ubuntu
Unable to find image 'ubuntu:latest' locally
latest: Pulling from library/ubuntu
ff65ddf9395b: Pull complete
Digest: sha256:99c35190e22d294cdace2783ac55effc69d32896daaa265f0bbbedbcde4fbc3e5
Status: Downloaded newer image for ubuntu:latest
root@53a234509cf0:/# ll
total 0
drwxr-xr-x. 1 root root  6 Nov  6 04:05 ./
drwxr-xr-x. 1 root root  6 Nov  6 04:05 ../
-rwxr-xr-x. 1 root root  0 Nov  6 04:05 .dockerenv*
lrwxrwxrwx. 1 root root  7 Apr 22  2024 bin -> usr/bin/
drwxr-xr-x. 2 root root  6 Apr 22  2024 boot/
drwxr-xr-x. 5 root root 360 Nov  6 04:05 dev/
drwxr-xr-x. 1 root root 66 Nov  6 04:05 etc/

i-062977e0a1253175f (DOCC)
PublicIPs: 13.233.147.184 PrivateIPs: 172.31.4.28

CloudShell Feedback
Type here to search
```




Services



```
drwxr-xr-x. 2 root roo
dr-xr-xr-x. 13 root roo
drwxrwxrwt. 2 root roo
drwxr-xr-x. 12 root roo
drwxr-xr-x. 11 root roo
root@53a234509cf0:/# [r
[root@ip-172-31-4-28 ~]
CONTAINER ID    IMAGE
53a234509cf0    ubuntu
[root@ip-172-31-4-28 ~]
```

```
[
```

```
{
```

```
"Id": "53a234509cf0",
"Created": "2023-01-10T10:10:10Z",
"Path": "/bin/bash",
"Args": [],
"State": {
  "Status": "running"
```

`docker inspect (container id)`

`docker network create devops`

`docker network ls`

`Docker run -it - -name cont1 - -network devops Ubuntu`

`LI`

`Ctrl p q`

`docker ps`

`docker inspect cont1`


```
ap-south-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=ap-south-1&con

aws Services Search

root@ip-172-31-4-28 ~]# docker network create devops
1d45d50f203551ce1dd8c8ebbe9a201a64e23eff35da37015798600f3aaa705
root@ip-172-31-4-28 ~]# docker network ls
NETWORK ID          NAME          DRIVER          SCOPE
197506b0bdb         bridge        bridge          local
1d45d50f203         devops        bridge          local
4f2e269c582         host         host           local
3f23ff9c800         none         null           local
root@ip-172-31-4-28 ~]# docker run -it --name cont1 --network devops ubuntu
root@48c3e3d2ea71:/# ll
total 0
drwxr-xr-x. 1 root root 6 Nov 6 04:07 ./
drwxr-xr-x. 1 root root 6 Nov 6 04:07 ../
drwxr-xr-x. 1 root root 0 Nov 6 04:07 .dockerenv*
drwxr-xr-x. 2 root root 6 Apr 22 2024 bin -> usr/bin/
drwxr-xr-x. 5 root root 360 Nov 6 04:07 boot/
drwxr-xr-x. 1 root root 66 Nov 6 04:07 dev/
drwxr-xr-x. 3 root root 20 Oct 11 02:09 etc/
drwxr-xr-x. 1 root root 7 Apr 22 2024 lib -> usr/lib/
drwxr-xr-x. 1 root root 9 Apr 22 2024 lib64 -> usr/lib64/
drwxr-xr-x. 2 root root 6 Oct 11 02:03 media/
drwxr-xr-x. 2 root root 6 Oct 11 02:03 mnt/
drwxr-xr-x. 2 root root 6 Oct 11 02:03 opt/
dr-xr-xr-x. 184 root root 0 Nov 6 04:07 proc/
drwx----- 2 root root 37 Oct 11 02:09 root/
drwxr-xr-x. 4 root root 33 Oct 11 02:09 run/

i-062977e0a1253175f (DOCC)
PublicIPs: 13.233.147.184 PrivateIPs: 172.31.4.28

CloudShell Feedback
Type here to search
```

docker attach cont1

ll

apt update -y

apt install iputils-ping

ping google.com

ctrl p q

```
aws console
ap-south-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=ap-south-1&con

root@ip-172-31-4-28 ~]# docker network create devops
1d45d50f203551ce1dd8c8ebbe9a201a64e23eff35da37015798600f3aaa705
root@ip-172-31-4-28 ~]# docker network ls
NETWORK ID          NAME          DRIVER          SCOPE
197506b0bdb         bridge       bridge          local
1d45d50f203         devops       bridge          local
4f2e269c582         host        host            local
3f23ff9c800         none        null            local
root@ip-172-31-4-28 ~]# docker run -it --name cont1 --network devops ubuntu
oot@48c3e3d2ea71:/# ll
total 0
drwxr-xr-x. 1 root root   6 Nov  6 04:07 ./
drwxr-xr-x. 1 root root   6 Nov  6 04:07 ../
drwxr-xr-x. 1 root root   0 Nov  6 04:07 .dockerenv*
drwxr-xr-x. 2 root root   6 Apr 22 2024 bin -> usr/bin/
drwxr-xr-x. 5 root root 360 Nov  6 04:07 boot/
drwxr-xr-x. 1 root root  66 Nov  6 04:07 etc/
drwxr-xr-x. 3 root root 20 Oct 11 02:09 home/
drwxr-xr-x. 1 root root   7 Apr 22 2024 lib -> usr/lib/
drwxr-xr-x. 1 root root   9 Apr 22 2024 lib64 -> usr/lib64/
drwxr-xr-x. 2 root root   6 Oct 11 02:03 media/
drwxr-xr-x. 2 root root   6 Oct 11 02:03 mnt/
drwxr-xr-x. 2 root root   6 Oct 11 02:03 opt/
dr-xr-xr-x. 184 root root   0 Nov  6 04:07 proc/
drwx----- 2 root root  37 Oct 11 02:09 root/
drwxr-xr-x. 4 root root  33 Oct 11 02:09 run/

i-062977e0a1253175f (DOCC)
PublicIPs: 13.233.147.184 PrivateIPs: 172.31.4.28

CloudShell Feedback
Type here to search
```


Services Search
[root@ip-172-31-4-28 ~]# docker attach cont1
root@48c3e3d2ea71:/# 11

total 0

drwxr-xr-x.	1	root	root	6	Nov	6	04:07	./
drwxr-xr-x.	1	root	root	6	Nov	6	04:07	../
-rwxr-xr-x.	1	root	root	0	Nov	6	04:07	.dockerenv*
lrwxrwxrwx.	1	root	root	7	Apr	22	2024	bin -> usr/bin/
drwxr-xr-x.	2	root	root	6	Apr	22	2024	boot/
drwxr-xr-x.	5	root	root	360	Nov	6	04:07	dev/
drwxr-xr-x.	1	root	root	66	Nov	6	04:07	etc/
drwxr-xr-x.	3	root	root	20	Oct	11	02:09	home/
lrwxrwxrwx.	1	root	root	7	Apr	22	2024	lib -> usr/lib/
lrwxrwxrwx.	1	root	root	9	Apr	22	2024	lib64 -> usr/lib64/
drwxr-xr-x.	2	root	root	6	Oct	11	02:03	media/
drwxr-xr-x.	2	root	root	6	Oct	11	02:03	mnt/
drwxr-xr-x.	2	root	root	6	Oct	11	02:03	opt/
dr-xr-xr-x.	174	root	root	0	Nov	6	04:07	proc/
drwx-----.	2	root	root	37	Oct	11	02:09	root/
drwxr-xr-x.	4	root	root	33	Oct	11	02:09	run/
lrwxrwxrwx.	1	root	root	8	Apr	22	2024	sbin -> usr/sbin/
drwxr-xr-x.	2	root	root	6	Oct	11	02:03	srv/
dr-xr-xr-x.	13	root	root	0	Nov	6	03:31	sys/
drwxrwxrwt.	2	root	root	6	Oct	11	02:09	tmp/
drwxr-xr-x.	12	root	root	133	Oct	11	02:03	usr/
drwxr-xr-x.	11	root	root	139	Oct	11	02:09	var/

root@48c3e3d2ea71:/# apt update -y

Get:1 <http://security.ubuntu.com/ubuntu> noble-security InRelease

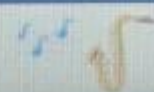
i-062977e0a1253175f (DOCC)

PublicIPs: 13.233.147.184 PrivateIPs: 172.31.4.28

CloudShell Feedback



Type here to search



Now see the containers are running

Docker ps

docker (attach container id copy)

apt update

apt install iputils-ping

y

ping google.com

ctrl p q

```
Get:9 http://security.ubuntu.com/ubuntu noble
Get:10 http://archive.ubuntu.com/ubuntu noble
Get:11 http://archive.ubuntu.com/ubuntu noble
Get:12 http://archive.ubuntu.com/ubuntu noble
Get:13 http://archive.ubuntu.com/ubuntu noble
Get:14 http://archive.ubuntu.com/ubuntu noble
Get:15 http://archive.ubuntu.com/ubuntu noble
Get:16 http://archive.ubuntu.com/ubuntu noble
Get:17 http://archive.ubuntu.com/ubuntu noble
Fetched 26.3 MB in 4s (5877 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
3 packages can be upgraded. Run 'apt list --up
root@48c3e3d2ea71:/# apt install iputils-ping
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be inst
  libcap2-bin libpam-cap
The following NEW packages will be installed:
  iputils-ping libcap2-bin libpam-cap
0 upgraded, 3 newly installed, 0 to remove and
Need to get 91.1 kB of archives.
After this operation, 319 kB of additional dis
Do you want to continue? [Y/n] y
Get:1 http://archive.ubuntu.com/ubuntu noble/m
```

i-062977e0-12571756 (p...

`docker ps`

`docker inspect (container id)`

64 bytes from bom12s13-in-f14.1e100.net
64 bytes from bom12s13-in-f14.1e100.net
64 bytes from bom12s13-in-f14.1e100.net
64 bytes from bom12s13-in-f14.1e100.net
read escape sequence

[root@ip-172-31-4-28 ~]# docker ps

CONTAINER ID	IMAGE	COMMAND	CR
48c3e3d2ea71	ubuntu	"/bin/bash"	3
53a234509cf0	ubuntu	"/bin/bash"	5

[root@ip-172-31-4-28 ~]# docker inspect 5

{

"Id": "53a234509cf0193c8e9e801fc5"

"Created": "2024-11-06T04:05:17.3"

"Path": "/bin/bash",

"Args": [],

"State": {

"Status": "running",

"Running": true,

"Paused": false,

"Restarting": false,

"OOMKilled": false,

"Dead": false,

i-062977e0a1253175f (DOCC)

PublicIPs: 13.233.147.184 PrivateIPs: 172.31.4.28

docker attach cont1

ping (here default container Ip address copy)

ctrl q (here packet los)

[illegible]

```
[root@ip-172-31-4-28 ~]# ping 172.17.0.2
PING 172.17.0.2 (172.17.0.2) 56(84)
64 bytes from 172.17.0.2: icmp_seq=1
64 bytes from 172.17.0.2: icmp_seq=2
64 bytes from 172.17.0.2: icmp_seq=3
64 bytes from 172.17.0.2: icmp_seq=4
64 bytes from 172.17.0.2: icmp_seq=5
64 bytes from 172.17.0.2: icmp_seq=6
64 bytes from 172.17.0.2: icmp_seq=7
64 bytes from 172.17.0.2: icmp_seq=8
64 bytes from 172.17.0.2: icmp_seq=9
64 bytes from 172.17.0.2: icmp_seq=10
64 bytes from 172.17.0.2: icmp_seq=11
```


docker ps

docker network connect devops exciting-fermact

docker inspect (container id)

ping (copy ipaddress)

ctrl p q

docker network ls

tt min/avg/max/mdev = 0.021/0.043/0.084/

root@ip-172-31-4-28 ~]# docker network

NETWORK ID	NAME	DRIVER	SCOPE
a197506b0bdb	bridge	bridge	local
1d45d50f203	devops	bridge	local
24f2e269c582	host	host	local
63f23ff9c800	none	null	local

[root@ip-172-31-4-28 ~]# docker network

WARNING! This will remove all custom network

Are you sure you want to continue? [y/N]

[root@ip-172-31-4-28 ~]# docker ps

CONTAINER ID	IMAGE	COMMAND	CP
48c3e3d2ea71	ubuntu	"/bin/bash"	11
53a234509cf0	ubuntu	"/bin/bash"	14

[root@ip-172-31-4-28 ~]# docker kill 48c3

48c3e3d2ea71

[root@ip-172-31-4-28 ~]# docker rm 48c3e3

48c3e3d2ea71

[root@ip-172-31-4-28 ~]# docker network
devops

[root@ip-172-31-4-28 ~]# docker network

NETWORK ID	NAME	DRIVER	SCOPE
a197506b0bdb	bridge	bridge	local
24f2e269c582	host	host	local
63f23ff9c800	none	null	local

[root@ip-172-31-4-28 ~]# docker inspect 5

docker network prune

y

docker kill (cont id)

docker rm (cont id)

docker network rm devops

docker network ls


```
[root@ip-172-31-4-28 ~]# docker r
WARNING! This will remove all cus
Are you sure you want to continue
[root@ip-172-31-4-28 ~]# docker p
CONTAINER ID      IMAGE      COMMAND
48c3e3d2ea71      ubuntu    "/bin/ba
53a234509cf0      ubuntu    "/bin/ba
[root@ip-172-31-4-28 ~]# docker k
48c3e3d2ea71
[root@ip-172-31-4-28 ~]# docker r
48c3e3d2ea71
[root@ip-172-31-4-28 ~]# docker n
devops
[root@ip-172-31-4-28 ~]# docker n
NETWORK ID        NAME        DRIVER
a197506b0bdb      bridge     bridge
24f2e269c582      host       host
63f23ff9c800      none       null
[root@ip-172-31-4-28 ~]# docker i
```

i-062977e0a1253175f (DOCC)

PublicIPs: 13.233.147.104

Docker swarm :

Step 1: create the amazon linux and connect after edit inbound rules
add the all traffic

Step2: same edit the docker network server allow the all traffic.

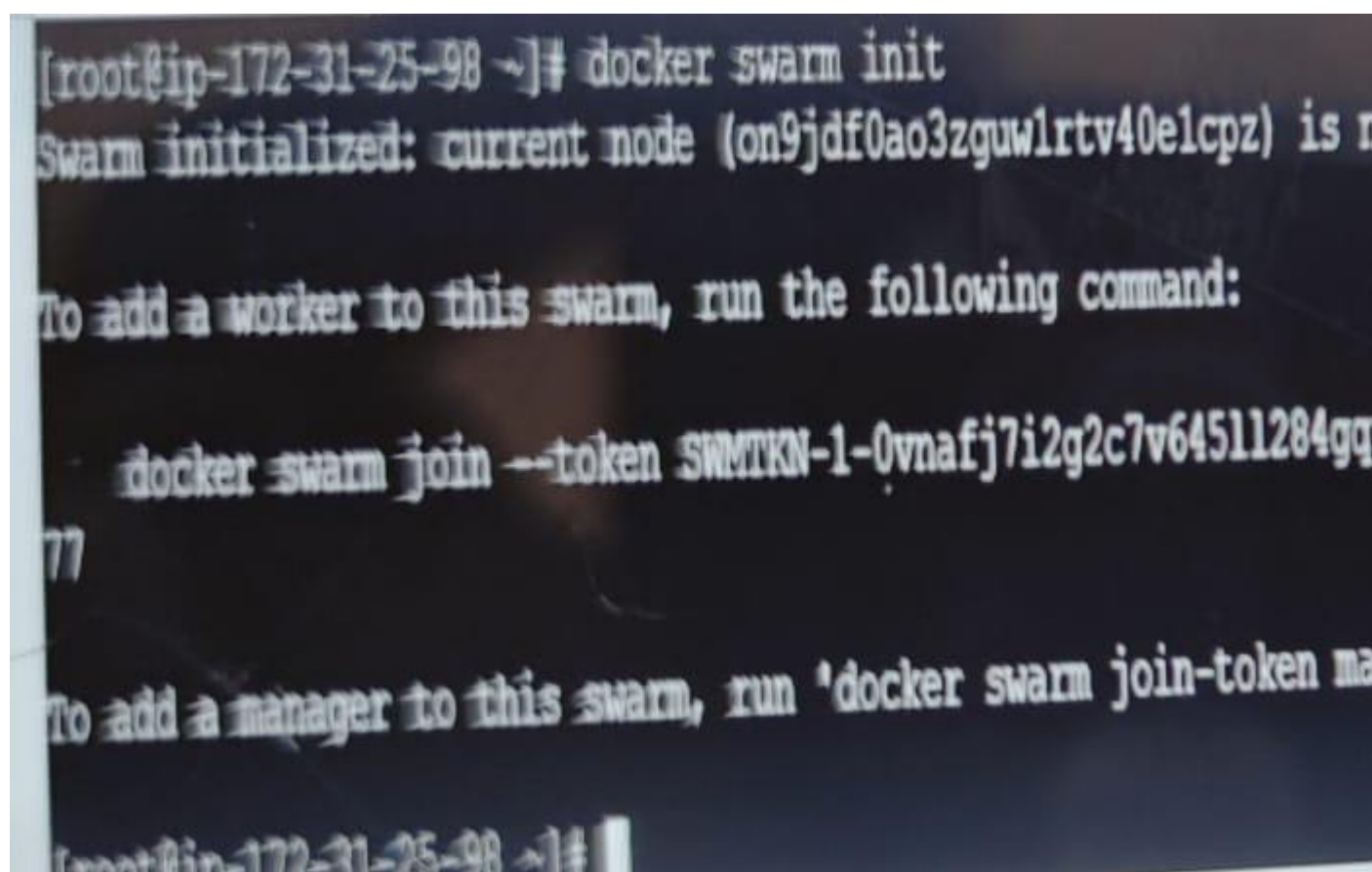
Step3: run the

`sudo su -`

`apt install docker -y`

`systemctl start docker`

here run in docker server `docker swarm init`

A screenshot of a terminal window showing the output of the 'docker swarm init' command. The prompt is '[root@ip-172-31-25-98 ~]#'. The output reads: 'Swarm initialized: current node (on9jdf0ao3zguwlrtv40e1cpz) is r'. Below this, it says 'To add a worker to this swarm, run the following command:' followed by the command 'docker swarm join --token SWMTKN-1-0vnafj7i2g2c7v64511284gg'. The next line shows '77'. Then it says 'To add a manager to this swarm, run 'docker swarm join-token ma'. The final line shows the prompt '[root@ip-172-31-25-98 ~]#'.

```
[root@ip-172-31-25-98 ~]# docker swarm init
Swarm initialized: current node (on9jdf0ao3zguwlrtv40e1cpz) is r

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

    docker swarm join --token SWMTKN-1-0vnafj7i2g2c7v64511284gg
77

To add a manager to this swarm, run 'docker swarm join-token ma

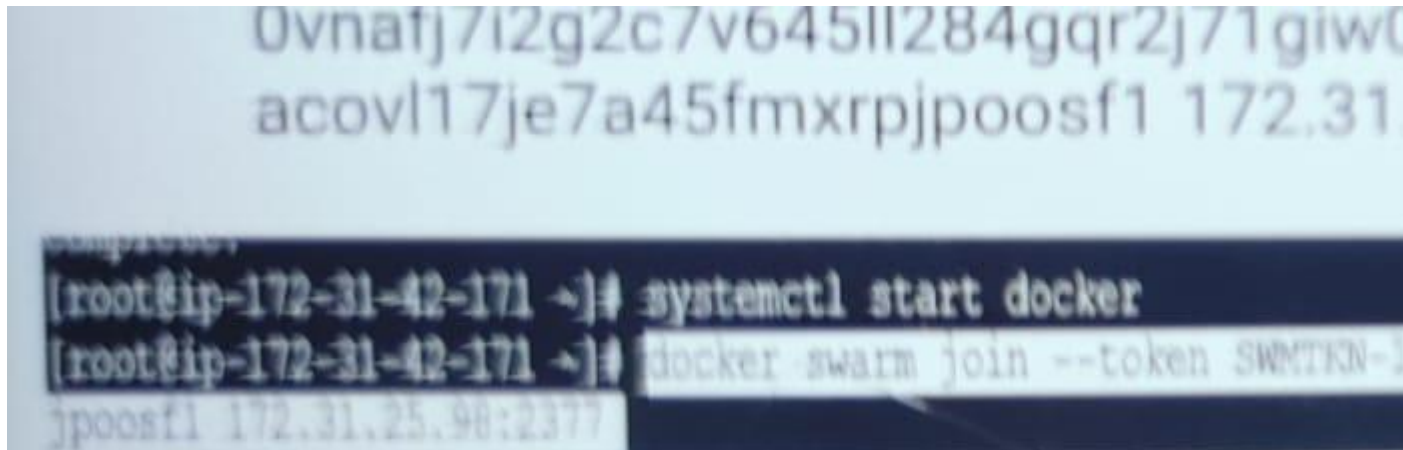
[root@ip-172-31-25-98 ~]#
```

after run in swarm server

`docker swarm join --token SWMTKN-1-`

`0vnafj7i2g2c7v645ll284gqr2j71giw0pq2s687gf5firc86q-`

`acovl17je7a45fmxrpjpoosf1 172.31.25.98:2377` (run the swarm server)



run docker

`docker node ls`

To add a manager to this swarm, run 'docker swarm join-

```
[root@ip-172-31-25-98 ~]# docker node ls
```

```
ID                                HOSTNAME  
on9jdf0ao3zguwlrty40a1cpz *    ip-172-31-25-98.ec2.inte
```

```
[root@ip-172-31-25-98 ~]# docker node ls
```

```
ID                                HOSTNAME  
on9jdf0ao3zguwlrty40a1cpz *    ip-172-31-25-98.ec2.inte
```

```
zcoe2jn3tsy3z7dz2c22wte0n    ip-172-31-42-171.ec2.inte
```

```
[root@ip-172-31-25-98 ~]#
```

```
on9jdf0ao3zguwlrty40elcpz * ip-172-31-25-98.ec2.
zcce2jn3tsy7dz2c22wte0n ip-172-31-42-171.ec2
[root@ip-172-31-25-98 ~]# docker service ls
ID            NAME            MODE            REPLICAS    IMAGE
[root@ip-172-31-25-98 ~]# docker service create --r
dlghvxf12575df2x44glet3ac
overall progress: 1 out of 1 tasks
1/1: running  [-=====]
verify: Service converged
[root@ip-172-31-25-98 ~]# docker service create --r
wzf1liu7a73tm3yut47w9laxapm
overall progress: 1 out of 1 tasks
1/1: running  [-=====]
verify: Service converged
[root@ip-172-31-25-98 ~]# docker ps
CONTAINER ID    IMAGE           COMMAND
22e9b08ed0f6   httpd:latest   "httpd-foreground"
c0870f762dd6   ubuntu         "/bin/bash"
[root@ip-172-31-25-98 ~]#
```

Complete!

```
[root@ip-172-31-42-171 ~]# systemctl start docker
```

```
[root@ip-172-31-42-171 ~]# docker swarm join --token
```

```
jpoo5f1 172.31.25.98:2377
```

This node joined a swarm as a worker.

```
[root@ip-172-31-42-171 ~]# docker ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS
--------------	-------	---------	---------	--------

```
[root@ip-172-31-42-171 ~]# docker ps
```

CONTAINER ID	IMAGE	COMMAND
--------------	-------	---------