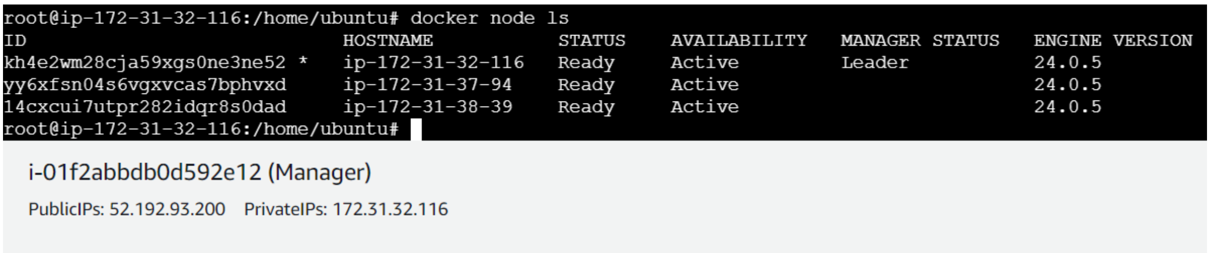
Controlling service placement

We have three nodes



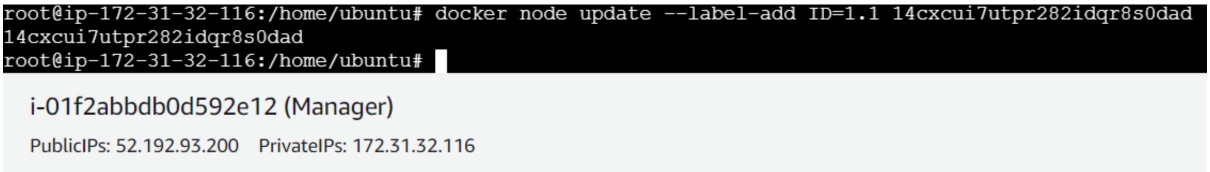
```
root@ip-172-31-32-116:/home/ubuntu# docker node ls
ID                            HOSTNAME           STATUS    AVAILABILITY   MANAGER STATUS   ENGINE VERSION
kh4e2wm28cja59xgs0ne3ne52 *   ip-172-31-32-116   Ready     Active         Leader           24.0.5
yy6xfsn04s6vgxvcas7bphvxd     ip-172-31-37-94    Ready     Active                          24.0.5
14cxcui7utpr282idqr8s0dad     ip-172-31-38-39    Ready     Active                          24.0.5
root@ip-172-31-32-116:/home/ubuntu#
```

i-01f2abbdb0d592e12 (Manager)

PublicIPs: 52.192.93.200   PrivateIPs: 172.31.32.116

1. first we will assign worker 1 node a label

docker node update --label-add ID=1.1 < node ID >

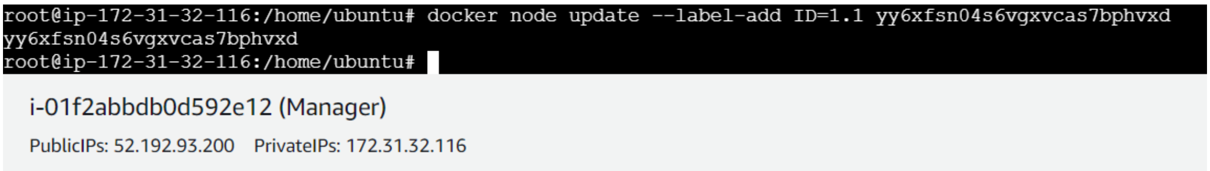


```
root@ip-172-31-32-116:/home/ubuntu# docker node update --label-add ID=1.1 14cxcui7utpr282idqr8s0dad
14cxcui7utpr282idqr8s0dad
root@ip-172-31-32-116:/home/ubuntu#
```

i-01f2abbdb0d592e12 (Manager)

PublicIPs: 52.192.93.200   PrivateIPs: 172.31.32.116

Same for worker 2 also



```
root@ip-172-31-32-116:/home/ubuntu# docker node update --label-add ID=1.1 yy6xfsn04s6vgxvcas7bphvxd
yy6xfsn04s6vgxvcas7bphvxd
root@ip-172-31-32-116:/home/ubuntu#
```

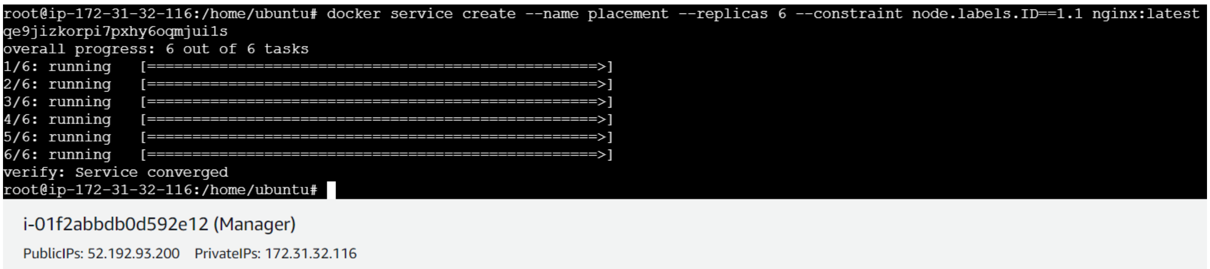
i-01f2abbdb0d592e12 (Manager)

PublicIPs: 52.192.93.200   PrivateIPs: 172.31.32.116

2. Now Deploy a new service to only those nodes which share the value of node.labels.ID as 1.1 as given below

docker service create --name --replicas 6 --constraint node.labels.ID ==1.1 <image>

e.g- docker service create --name placement --replicas 6 --constraint node.labels.ID==1.1 nginx:latest



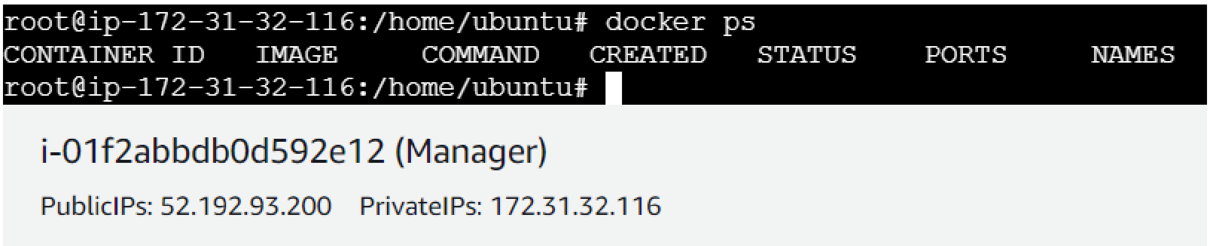
```
root@ip-172-31-32-116:/home/ubuntu# docker service create --name placement --replicas 6 --constraint node.labels.ID==1.1 nginx:latest
qe9jizkorpi7pxhy6oqmjui1s
overall progress: 6 out of 6 tasks
1/6: running   [==================================================>]
2/6: running   [==================================================>]
3/6: running   [==================================================>]
4/6: running   [==================================================>]
5/6: running   [==================================================>]
6/6: running   [==================================================>]
verify: Service converged
root@ip-172-31-32-116:/home/ubuntu#
```

i-01f2abbdb0d592e12 (Manager)

PublicIPs: 52.192.93.200   PrivateIPs: 172.31.32.116

But if we try to check container in manager node it will show us nothing

docker ps

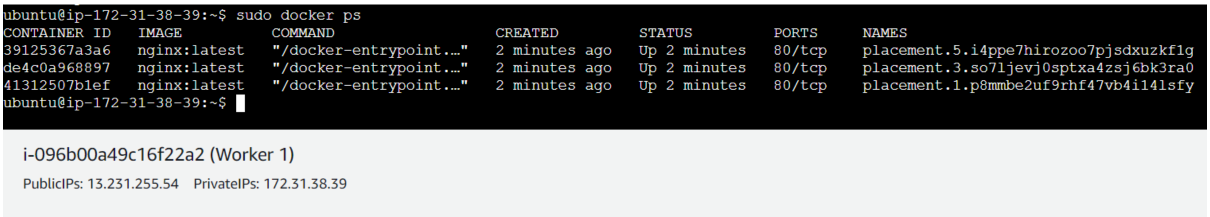


```
root@ip-172-31-32-116:/home/ubuntu# docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS     NAMES
root@ip-172-31-32-116:/home/ubuntu#
```

i-01f2abbdb0d592e12 (Manager)

PublicIPs: 52.192.93.200   PrivateIPs: 172.31.32.116

Let’s check it in worker 1 node

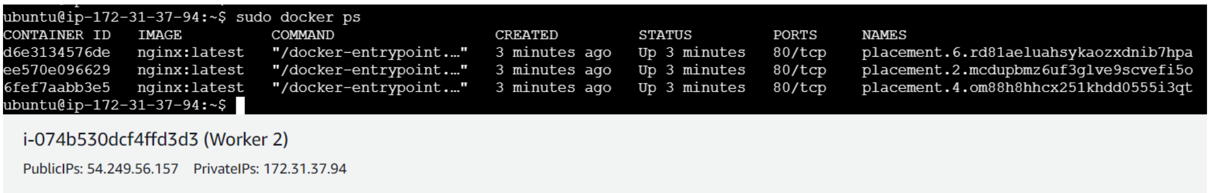


```
ubuntu@ip-172-31-38-39:~$ sudo docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED         STATUS         PORTS     NAMES
39125367a3a6   nginx:latest   "/docker-entrypoint.…"   2 minutes ago   Up 2 minutes   80/tcp    placement.5.i4ppe7hirozoo7pjsdxuzkf1g
de4c0a968897   nginx:latest   "/docker-entrypoint.…"   2 minutes ago   Up 2 minutes   80/tcp    placement.3.so7ljevj0sptxa4zsj6bk3ra0
41312507b1ef   nginx:latest   "/docker-entrypoint.…"   2 minutes ago   Up 2 minutes   80/tcp    placement.1.p8mmbe2uf9rhf47vb4i14lsfy
ubuntu@ip-172-31-38-39:~$
```

i-096b00a49c16f22a2 (Worker 1)

PublicIPs: 13.231.255.54   PrivateIPs: 172.31.38.39

Let’s check worker 2 node also



```
ubuntu@ip-172-31-37-94:~$ sudo docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED         STATUS         PORTS     NAMES
d6e3134576de   nginx:latest   "/docker-entrypoint.…"   3 minutes ago   Up 3 minutes   80/tcp    placement.6.rd81aeluahsykaozxdnib7hpa
ee570e096629   nginx:latest   "/docker-entrypoint.…"   3 minutes ago   Up 3 minutes   80/tcp    placement.2.mcdupbmz6uf3glve9scvefi5o
6fef7aabb3e5   nginx:latest   "/docker-entrypoint.…"   3 minutes ago   Up 3 minutes   80/tcp    placement.4.om88h8hhcx251khdd0555i3qt
ubuntu@ip-172-31-37-94:~$
```

i-074b530dcf4ffd3d3 (Worker 2)

PublicIPs: 54.249.56.157   PrivateIPs: 172.31.37.94

This happened because we have assigned labels to worker 1 and worker 2 only

--placement-pref flag is used to evenly distribute the service tasks across nodes with certain label value.