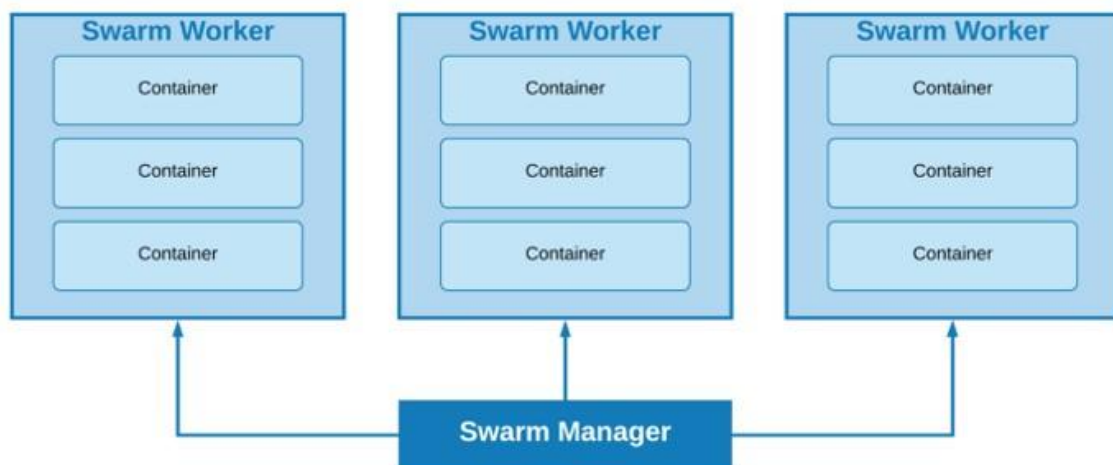


DOCKER SWARM

What is Docker Swarm

1. Docker swarm is an orchestration service it is used to manage multiple containers at the same time
2. It is implemented by cluster
3. Docker Engine helps to create docker swarm
4. Docker swarm is having two nodes
 - Manager Node
 - Worker Node

Docker Swarm Architecture



Steps to create docker swarm

Step 1:

1. First install the docker packages in terminal and start the docker
2. Allow all traffic for the manager server
3. To create the manager node in terminal the command is

docker swarm init	It is manager node in terminal
--------------------------	--------------------------------

```
Last login: Tue Nov  5 09:02:30 2024 from 18.206.107.29
[ec2-user@ip-172-31-19-173 ~]$ sudo -i
[root@ip-172-31-19-173 ~]# docker swarm init
Swarm initialized: current node (urr3ghxmv0t2kygckbk2y6bkl) is now a manager.

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

    docker swarm join --token SWMTKN-1-2gelyeq5wa4qr7xtyjvrxbtm5d359ki8wr3io1nt7izdz4s197-ezhhyfiwj6zg6wzv5ewfi5a7k 172.31.19.173:2377

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

[root@ip-172-31-19-173 ~]#
```

Step 2:

1. Create the second server that is worker node
2. Allow all the traffic to that second server
3. Install the docker packages in the second server and start the docker service
4. Copy the generated token in the manager server and paste in the worker server
5. Then worker node is created in second server
6. List the nodes in manager server by using command

docker node ls	To list the nodes
-----------------------	-------------------

```
[root@ip-172-31-2-58 ~]# docker node ls
ID                                HOSTNAME                                STATUS  AVAILABILITY  MANAGER STATUS  ENGINE VERSION
2mb37otm8bu929ag1g8yq3rss *    ip-172-31-2-58.ap-south-1.compute.internal  Ready  Active                Leader           25.0.6
kltxeadegkeur9rpsjubdn9xx      ip-172-31-103.ap-south-1.compute.internal  Ready  Active                               25.0.6
[root@ip-172-31-2-58 ~]#
```

7. To create the service by the command is

docker service create --name Netflix --publish 8080:80 httpd

It is used to create the service from manager server then manager can take decision where the service to be install worker or manager

8. To see the services by the command

docker service ls	To list the services
--------------------------	----------------------

```
verify: Service converged
[root@ip-172-31-2-58 ~]# docker service ls
ID                NAME      MODE      REPLICAS  IMAGE      PORTS
xfz0u4vufkyn     aha       replicated 1/1        httpd:latest *:8082->80/tcp
f660e75trq9i     flipkart  replicated 1/1        httpd:latest *:8081->80/tcp
zgubwu2t6fh4     netflix   replicated 1/1        httpd:latest *:8080->80/tcp
[root@ip-172-31-2-58 ~]#
```

9. I created up to three services but in worker node it having only one the manager can assign only one service to worker as shown in below figure

```
[root@ip-172-31-10-103 ~]# docker ps
CONTAINER ID   IMAGE      COMMAND                  CREATED        STATUS        PORTS        NAMES
bb2adf618031  httpd:latest "httpd-foreground"      5 minutes ago Up 5 minutes  80/tcp       flipkart.1.k75l5lg2biglwgal9em0flf2
[root@ip-172-31-10-103 ~]#
```

Step 3:

1. If we update the image then we need to update the service also by the command is

docker service update --image image name service name
--

It is used to update the service

2. To remove the service the command is

docker service rm service name
