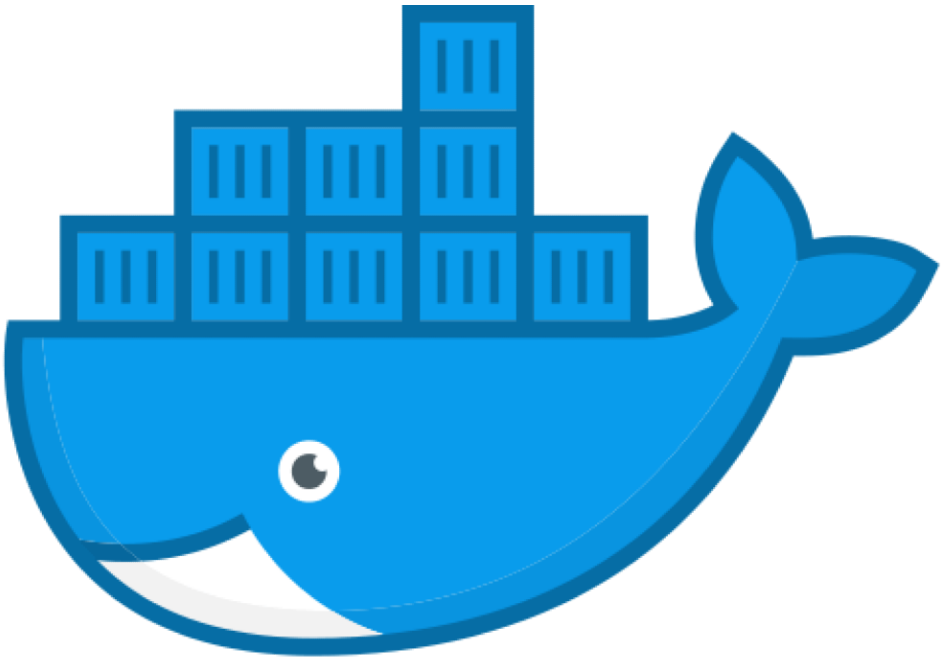


docker

&

docker CheatSheet

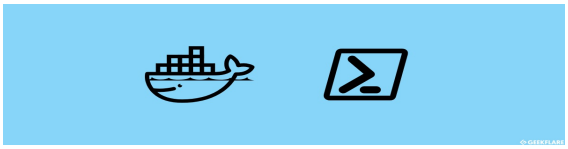


Table of Contents

Docker

To run the docker, you have to start the docker service by the below command:
sudo systemctl start docker

Docker runs on Port 80. So, if you couldn't run docker on your system. Then definitely, there is some other service that will be running on Port 80 such as Nginx or apache2.
So, first stop that service which is running on Port 80 then, start the docker service.

Theory

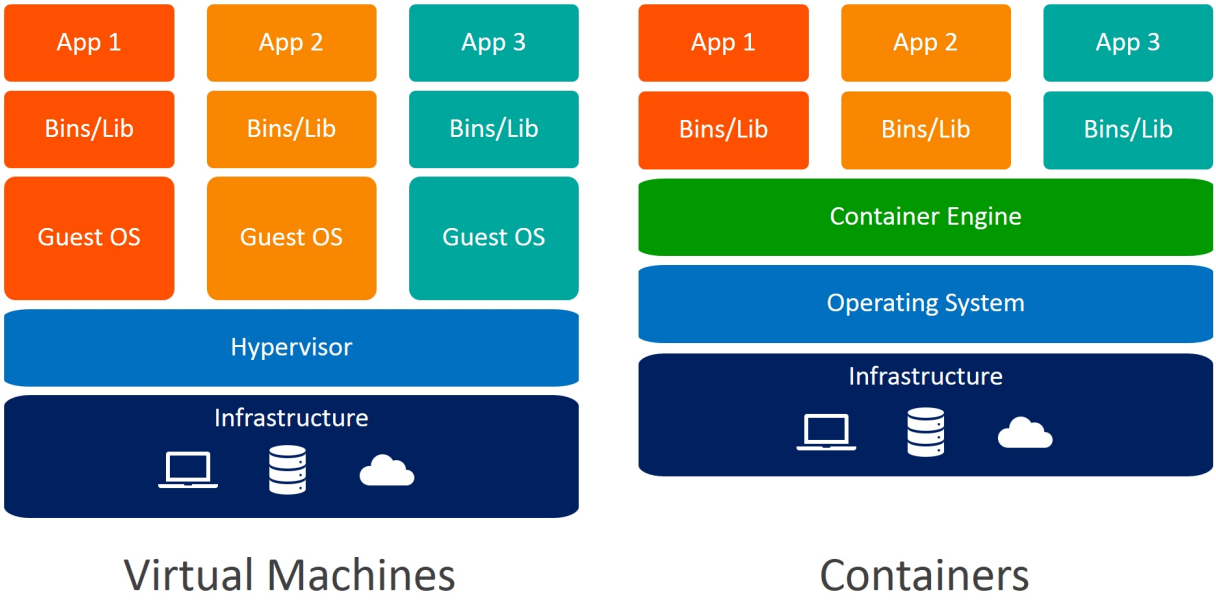
- Docker is a tool for running applications in an isolated environment.
- Similar to VM
- Apps run in the same environment.
- Just works
- Stands for software development

Containers

Containers are an abstraction at the app layer that package code and dependencies together. Multiple containers can run on the same machine and share the same OS kernel with other containers, each running an isolated process in userspace.

Virtual Machines

Virtual machines are an abstraction of physical hardware turning one server into many servers. The hypervisor allows multiple VMs to run on a single machine. Each VIM includes a full copy of an OS, the app, necessary binaries and libraries taking up tens of GBs. VMs can also be slow to boot.



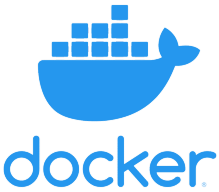
Virtual Machines

Containers

To Install and configure the Docker on Ubuntu 22.04, follow the below link:

https://www.digitalocean.com/community/tutorials/how-to-install-and-use-docker-on-ubuntu-22-04

Docker Commands



S.NO	Command	Use Case
	Docker Images	
1.	docker pull <image_name>	To pull the docker image from the docker hub.
2.	docker images	To list all images excluding hidden intermediate images.
3.	docker images -a	To list only docker images id excluding hidden intermediate images.
4.	docker rmi <image_name>	To remove the specific docker image.
5.	docker history <tags:version>	To see the image layer of docker.
6.	docker image inspect <image_id>	To check all the information related to the image
7.	docker image prune	To delete all the images from the local server
8.	docker image history <image_id>	To see all the history related to the image
9.	docker image save <image_id> < <desired_image_name>.tar	To save the image and all the other information like history,etc excluding mounted volumes data.
10.	docker image load <desire_image_name>.tar	To get the image and all the other information too.
11.	docker image import <desired_image_name>.tar <new_desired_image_name>	To import the saved image from the container as an image.
12.	docker image push	To push the image to registry such as Dockerhub.

Docker Container

13.	**docker run -p 8080:80 <image_name>:<tag>**	To run the container at the specific port number with the image tag.
14.	**docker run -d -p <images_name>:<tag>**	To run the container at the specific port number with the image tag with detach mode.
15.	**docker ps**	To list all the running containers.
16.	**docker ps -a**	To list both all the running containers and stopped containers.
17.	**docker stop <container_id>**	To stop the specific container.
18.	**docker start <container_id>**	To start the specific container.
19.	**docker rm <container_id>**	To remove the specific container.
20.	**docker rm $(docker ps -aq)**	To remove all the containers. But can't remove running containers.
21.	**docker rm -f $(docker ps -aq)**	To remove all the running containers and stopped containers.
22.	**docker run --name <container_id> -d -p 80:80 nginx:latest**	To give the name to the container.
23.	**docker exec -it <container_id> bash**	To go into the container.
24.	**docker container prune -f**	To remove all the stopped containers.
25.	**docker inspect <container_id>**	To see all the details of the specific container.
26.	**docker logs <container_id>**	To see all the logs of the specific container.

27.	**docker logs -f <container_id>**	To follow the logs or live logs.
28.	**Ctrl+p+q**	Whenever you exit from the container, the container stops and exits. So, to get rid of this, press these buttons when you are in the container.
29.	**docker container top <container_id>**	To list all the processes running inside the specific container.
30.	**docker container stats**	To see all the CPU utilization, Memory usage, Inputs, Outputs about every container.
31.	**docker rename <container_id> <new_container_name>**	To change the container name.
32.	**docker container restart <container_id>**	To restart the container
33.	**docker container rename <container_id> <new_name>**	To rename the container.
34.	**docker container attach <container_id>**	To attach to the container again after detaching it by -d argument.
35.	**docker kill <container_id>**	To kill the container.
36.	**docker container wait <container_id>**	Container will wait to kill or stop itself. Whenever the container will stop or kill then, it will notify the terminal by “0” status.
37.	**docker container pause <container_id>**	To pause the container.
38.	**docker container unpause <container_id>**	To unpause the container.
39.	**docker container port <container_id>**	To know the port mapping of the container like

		80/tcp -> 0.0.0.0:45 80/tcp -> :::45
40.	**docker container create <container_name> <command>**	To create a container only, It will not start the container. If you want to start the container then, use *docker container start <container_name>* command after this.
41.	**docker container diff <container_id>**	To observe the change in the container such as files creation or deletion, etc from the previous version. ***Note:*** *to check/follow the file creations or deletion use the watch command:* ***watch 'docker container diff <container_id>'***
42.	**docker container cp <source_file(from local)> <container_id:/directory>**	To copy the files from the local to the container's file system. Such as `docker container cp index.html 99316f94a56f:/usr/local`
43.	**docker container export <container_id> -o <desired_image_name>.tar**	To save the running/stopped container by importing it as a docker image. If you want to import this image then, you have to use **docker image export** command.
44.	**docker run --name <container_name> --volumes-from <old_container_name> -d -p 8081:80 nginx:latest**	To share the container volume
45.	**docker rm $(docker stop $(docker ps -aq))**	The final output of this command is to remove the containers directly (Time Saving).
46.	**docker container run -it --network <your_network_name> <image_name>**	It will run the container and attach the network with the container as well.
	# Volumes	
47.	**docker volume create**	To create the docker volume
48.	**docker volume inspect**	Get a detailed information of the docker volumes

49.	**docker volume ls**	To list all the docker volumes
50.	**docker container commit --author "Author Name" -m "Commit Description" <container_id> <desired_image_name>**	To create the image from the running container.
51.	**docker run --name <container_name> -v $(pwd) :/usr/share/nginx/html/:ro -d -p 8080:80 nginx:latest**	To link the file and send the file to the container volume.
52.	**docker run -d --name 1st -v vocs:/var/lib/mysql -e MYSQL_ALLOW_EMPTY_PASSWORD=true mysql**	It will create the docker volume too and run the container as well. So, you don't have to write two commands separately instead of doing both work in one individual command.
53.	**docker run -it -v /home/amanpathak/Documents/:/tmp/new/folder/ ubuntu:latest bash** ***OR*** **docker run -it --mount type=bind,source=$(pwd),target=/temp/upper/lower/ ubuntu bash**	It will bind mount your folder into the docker container. If the destination folder is not present then, it will auto create the folders that are not created and If you update any file or folder on the local machine or host machine then, the same changes will happen on the docker container such as modify the file content. It will do the same thing as above command, but there are some changes that you can notice here.
Networking		
54.	**docker network inspect <network_id>**	To get the all details regarding the docker network driver
55.	**docker network create -d <network_type> <your_network_name>**	It will create the network with network driver type as well.
56.	**docker container run -it --network <your_network_name> <image_name>**	It will run the container and attach the network with the container as well.

57.	**docker container run -it --network=none <image_name>**	It will run the container with a null docker network driver.
58.	**docker network connect <network_name> <container_name>**	To connect the container with th docker network
59.	**docker network disconnect <network_name> <container_name>**	To disconnect the container with th docker network
60.	**docker network prune**	To remove unused docker network
61.	**docker rm <network_name>**	To remove the specific docker network
62.	**docker network ls**	To list all the docker networks

Docker Compose

63.	**docker compose build**	Build or rebuild services
64.	**docker compose convert**	Converts the compose file to platform's canonical format
65.	**docker compose cp**	Copy files/folders between a service container and the local filesystem
66.	**docker compose create**	Creates containers for a service.
67.	**docker compose down**	Stop and remove containers, networks
68.	**docker compose events**	Receive real time events from containers.
69.	**docker compose exec**	Execute a command in a running container.
70.	**docker compose images**	List images used by the created containers
71.	**docker compose kill**	Force stop service containers.
72.	**docker compose logs**	View output from containers
73.	**docker compose ls**	List running compose projects
74.	**docker compose pause**	Pause services
75.	**docker compose port**	Print the public port for a port binding.
76.	**docker compose ps**	List containers

77.	**docker compose pull**	Pull service images
78.	**docker compose push**	Push service images
79.	**docker compose restart**	Restart containers
80.	**docker compose rm**	Removes stopped service containers
81.	**docker compose run**	Run a one-off command on a service.
82.	**docker compose start**	Start services
83.	**docker compose stop**	Stop services
84..	**docker compose top**	Display the running processes
85..	**docker compose unpause**	Unpause services
86.	**docker compose up**	Create and start containers
87.	**docker compose version**	Show the Docker Compose version information
88.	**docker search <image_name>**	Allows you to search for Docker images available on Docker Hub or other container registries.
89.	**docker system prune**	This command cleans up unused data such as containers, networks, and volumes. Useful for freeing up disk space.
90.	**docker network inspect <network_name>**	Provides detailed information about a specific Docker network, including its configuration and containers connected to it.
91.	**docker-compose up -d**	Starts containers defined in a Docker Compose file in detached mode, running them in the background.
92.	**docker-compose ps -q**	Lists only the container IDs of containers defined in a Docker Compose file.
93.	**docker-compose stop**	Stops containers defined in a Docker Compose file without removing them.
94.	**docker-compose restart**	Restarts containers defined in a Docker Compose file.

95.	**docker-compose logs -f**	Displays and follows the logs of all containers defined in a Docker Compose file in real-time.
96.	**docker-compose exec <service_name> <command>**	Executes a command in a specific service container defined in a Docker Compose file.
96.	**docker inspect -f '{{range .NetworkSettings.Networks}}{{.IPAddress}}{{end}}' <container_id>**	Retrieves the IP address of a running container.
97.	**docker image prune -a**	Removes all unused images, not just dangling ones.
98.	**docker-compose down -v**	Stops and removes containers defined in a Docker Compose file, including associated volumes.
99.	**docker-compose logs <service_name>**	Displays the logs of a specific service container defined in a Docker Compose file.
100.	**docker-compose build <service_name>**	Rebuilds a specific service defined in a Docker Compose file.
101.	**docker-compose scale <service_name>=<number_of_instances>**	Scales the number of containers for a specific service in a Docker Compose file.

Things you need to know about

Docker Volumes:

By default all files created inside a container are stored on a writable container layer

The data doesn't persist when that container is no longer running

A container's writable layer is tightly coupled to the host machine where the container is running. You can't easily move the data somewhere else.

Docker has two options for containers to store files in the host machine
so that the files are persisted even after the container stops

VOLUMES and BIND MOUNTS

Volumes are stored in a part of the host filesystem which is managed by Docker

Non-Docker processes should not modify this part of the filesystem

Bind Mounts may be stored anywhere on the host system

Non-Docker processes on the Docker host or a Docker container can modify them at any time

In Bind Mounts, the file or directory is referenced by its full path on the host machine.

Volumes are the best way to persist data in Docker

volumes are managed by Docker and are isolated from the core functionality of the host machine

A given volume can be mounted into multiple containers simultaneously.

When no running container is using a volume, the volume is still available to Docker and is not removed automatically. You can remove unused volumes using docker volume prune.

When you mount a volume, it may be named or anonymous.

Anonymous volumes are not given an explicit name when they are first mounted into a container

Volumes also support the use of volume drivers, which allow you to
store your data on remote hosts or cloud providers, among other possibilities.

For the Docker Volume Demo, Go through the video

[Docker Volume Demo of MySQL]

Docker Networking

The default network driver in the docker network is bridge. But if you want the network driver as per your want, then you can create it and then attach it with the docker container.

There are multiple types of docker network drivers such as bridge, host, macvlan, ipvlan, overlay, none.

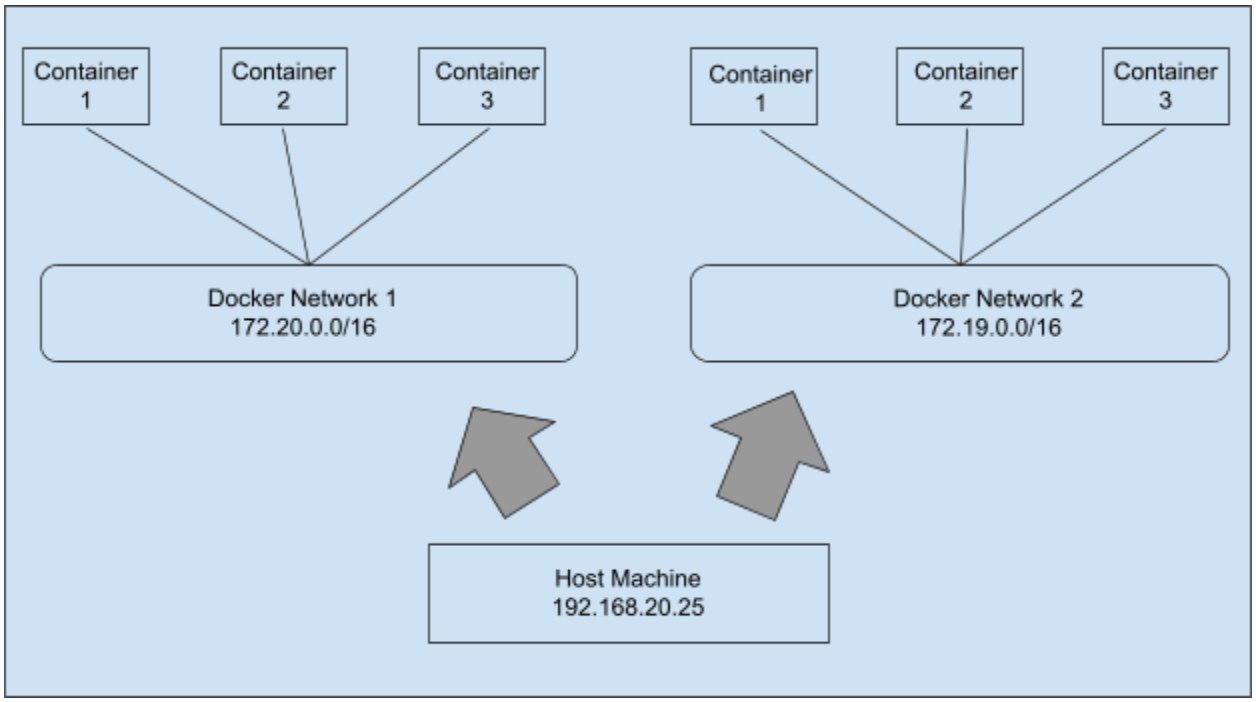
Docker takes care of the networking aspects so that the containers can communicate with other containers and also with the Docker Host. If you do an ifconfig on the Docker Host, you will see the Docker Ethernet adapter. This adapter is created when Docker is installed on the Docker Host.

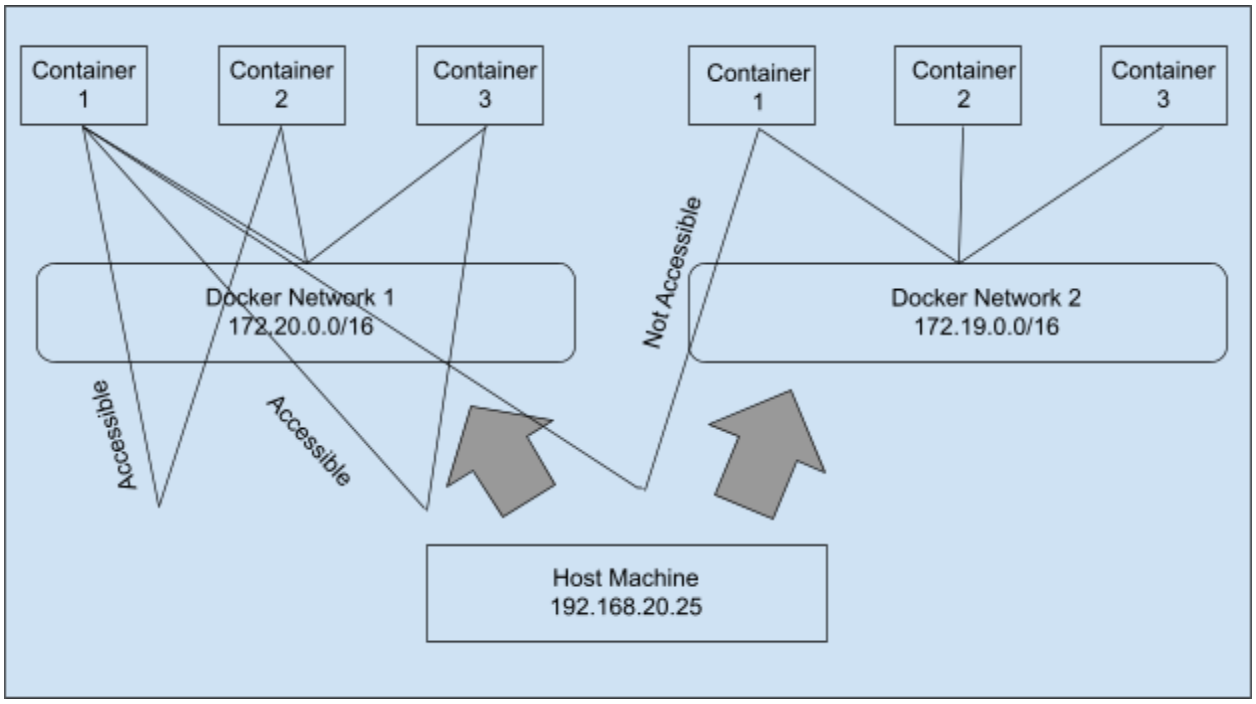
Docker Networking (Bridge Network)

enp0s10: | en| | --> ethernet v | p0| --> bus number (0) v s10 --> slot number (10)

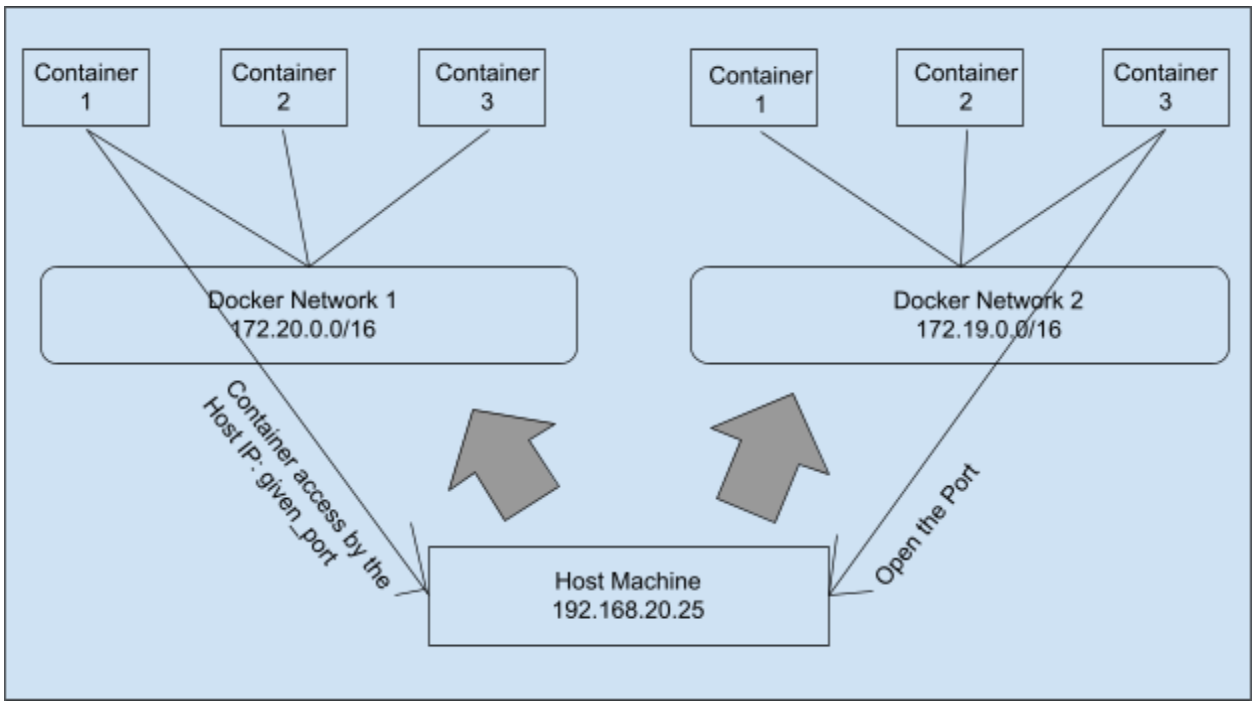
This is a bridge between the Docker Host and the Linux Host.

Whenever you run a container, it by default attaches with a bridge network driver but if you want to attach with your desired network driver then, you can do it by the command, in which you have to specify the network name (assuming that network is already created by you).





Docker Container 1 under the Docker network 1 can access or communicate with Docker Container 2 and Docker Container 3. Also Every Docker Container can communicate with any other Docker Container, if that Container is under the same Docker network.
But, any docker container of docker network 1 can't communicate with any docker container of docker network 2 because the network is not the same.
So, to access or communicate with other docker network's containers you can do it with the help of port mapping.



-> Create two network for Docker containers

```
root@aman-pathak:/home/amanpathak# docker network ls
NETWORK ID     NAME      DRIVER    SCOPE
03df63b2be07   bridge    bridge    local
e84e86cd8a7f   host      host      local
3b2f15468018   none      null      local
root@aman-pathak:/home/amanpathak#
root@aman-pathak:/home/amanpathak#
root@aman-pathak:/home/amanpathak#
root@aman-pathak:/home/amanpathak# docker network create -d bridge network1
97e8dd2e9ca66577bb13b73d423c14b6cdde363ed3712d95f399a2412b03f562
root@aman-pathak:/home/amanpathak#
root@aman-pathak:/home/amanpathak#
root@aman-pathak:/home/amanpathak#
root@aman-pathak:/home/amanpathak# docker network ls
NETWORK ID     NAME       DRIVER    SCOPE
03df63b2be07   bridge     bridge    local
e84e86cd8a7f   host       host      local
97e8dd2e9ca6   network1   bridge    local
3b2f15468018   none       null      local
root@aman-pathak:/home/amanpathak#
root@aman-pathak:/home/amanpathak#
root@aman-pathak:/home/amanpathak# docker network create -d bridge network2
17e67de39205e14b6c8c5273963d2853968865141345d368b7f4e45fcd4d6ab0
root@aman-pathak:/home/amanpathak#
root@aman-pathak:/home/amanpathak#
root@aman-pathak:/home/amanpathak#
root@aman-pathak:/home/amanpathak#
root@aman-pathak:/home/amanpathak# docker network ls
NETWORK ID     NAME       DRIVER    SCOPE
03df63b2be07   bridge     bridge    local
e84e86cd8a7f   host       host      local
97e8dd2e9ca6   network1   bridge    local
17e67de39205   network2   bridge    local
3b2f15468018   none       null      local
root@aman-pathak:/home/amanpathak#
```

-> Create two Docker Containers, First for ubuntu and other one for nginx(with port open by -P argument)

```
root@aman-pathak:/home/amanpathak# docker container run -itd --network network1 ubuntu
d53a47c6a2d66eb86ebb24570f16a1a5eb3ba95aed5ecc3e9da436bf6e092719
root@aman-pathak:/home/amanpathak#
root@aman-pathak:/home/amanpathak#
root@aman-pathak:/home/amanpathak#
root@aman-pathak:/home/amanpathak# docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED         STATUS         PORTS     NAMES
d53a47c6a2d6   ubuntu    "bash"    4 seconds ago   Up 3 seconds             gracious_ganguly
root@aman-pathak:/home/amanpathak#
root@aman-pathak:/home/amanpathak#
root@aman-pathak:/home/amanpathak#
root@aman-pathak:/home/amanpathak# docker container run -itd -P --network network2 nginx
611fe923dc51d0698cf8950cd931024bee86c0e3d68580697d56ade970f77ff2
root@aman-pathak:/home/amanpathak#
root@aman-pathak:/home/amanpathak#
root@aman-pathak:/home/amanpathak# docker ps
CONTAINER ID   IMAGE     COMMAND                  CREATED         STATUS         PORTS                                     NAMES
611fe923dc51   nginx     "/docker-entrypoint.…"   4 seconds ago   Up 3 seconds   0.0.0.0:49157->80/tcp, :::49157->80/tcp   thirsty_black
d53a47c6a2d6   ubuntu    "bash"                   17 seconds ago  Up 16 seconds                                            gracious_ganguly
root@aman-pathak:/home/amanpathak#
```

-> details of nginx docker container, Remember the IP


```
            "MacAddress": "",
            "Networks": {
                "network1": {
                    "IPAMConfig": null,
                    "Links": null,
                    "Aliases": [
                        "d53a47c6a2d6"
                    ],
                    "NetworkID": "97e8dd2e9ca66577bb13b73d423c14b6cdde363ed3712d95f399a2412b03f562",
                    "EndpointID": "2a2541639e4c1398e833bde43379a9361f385db5fd130eb543098bc2340ab4c6",
                    "Gateway": "172.25.0.1",
                    "IPAddress": "172.25.0.2",
                    "IPPrefixLen": 16,
                    "IPv6Gateway": "",
                    "GlobalIPv6Address": "",
                    "GlobalIPv6PrefixLen": 0,
                    "MacAddress": "02:42:ac:19:00:02",
                    "DriverOpts": null
                }
            }
        }
```

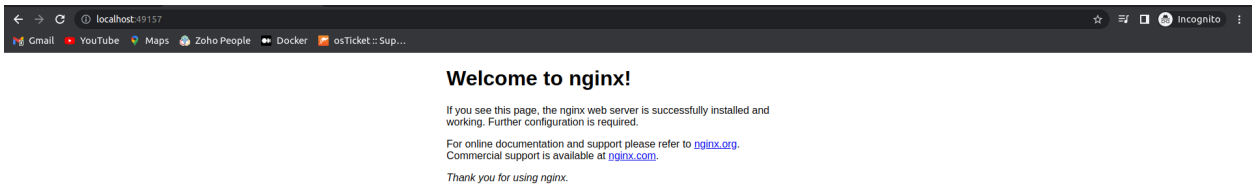

-> details of ubuntu docker container, Remember the IP

```
        "MacAddress": "",
        "Networks": {
            "network2": {
                "IPAMConfig": null,
                "Links": null,
                "Aliases": [
                    "611fe923dc51"
                ],
                "NetworkID": "17e67de39205e14b6c8c5273963d2853968865141345d368b7f4e45fcd4d6ab0",
                "EndpointID": "c7863056524259733242 3b912dae8eed98935c71591c86e863b62d9a6bfe275e",
                "Gateway": "172.26.0.1",
                "IPAddress": "172.26.0.2",
                "IPPrefixLen": 16,
                "IPv6Gateway": "",
                "GlobalIPv6Address": "",
                "GlobalIPv6PrefixLen": 0,
                "MacAddress": "02:42:ac:1a:00:02",
                "DriverOpts": null
            }
        }
    }
```


-> Remember the IP of the host machine

```
wlp3s0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 192.168.0.225  netmask 255.255.254.0  broadcast 192.168.1.255
        inet6 fe80::d2bb:dc7:c1ed:e178  prefixlen 64  scopeid 0x20<link>
        ether 4c:d5:77:79:02:df  txqueuelen 1000  (Ethernet)
        RX packets 440190  bytes 479953176 (479.9 MB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 184926  bytes 74578398 (74.5 MB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

-> Check that Port is open or Not.



-> enter in the ubuntu container and use wget to check that the container will communicate with another network's container or not.
But as you can see, the wget is not installed then install it first.

```
root@aman-pathak:/home/amanpathak# docker container exec -it gracious_ganguly bash
root@d53a47c6a2d6:/#
root@d53a47c6a2d6:/#
root@d53a47c6a2d6:/#
root@d53a47c6a2d6:/#
root@d53a47c6a2d6:/# wget 192.168.0.225
bash: wget: command not found
root@d53a47c6a2d6:/# apt-get update
Get:1 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
Get:2 http://archive.ubuntu.com/ubuntu jammy InRelease [270 kB]
Get:3 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 Packages [4644 B]
Get:4 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [344 kB]
Get:5 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [322 kB]
Get:6 http://archive.ubuntu.com/ubuntu jammy-updates InRelease [114 kB]
Get:7 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [142 kB]
Get:8 http://archive.ubuntu.com/ubuntu jammy-backports InRelease [99.8 kB]
```

```
root@d53a47c6a2d6:/# apt-get install wget
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  ca-certificates libmnl0 openssl publicsuffix
```

-> Now, enter the command wget:<host_machine_ip>

You can see here, that the different docker network container is accessible and can communicate with the different docker network container.

You can also ping or access the docker container within the same network by the hostname and container name as well.

I. Create a network
Ii. Create two container, both must be running in detach mode
Iii. Go in the first container and copy the hostname of it by the hostname command.
Iv. Go in the second container and run the command ping <hostname_container1>

The Output will look like this:

```
root@f8c13edd84dc:/# ping 8e05f02c4b07
PING 8e05f02c4b07 (172.27.0.2) 56(84) bytes of data.
64 bytes from 8e05f02c4b07.one (172.27.0.2): icmp_seq=1 ttl=64 time=0.228 ms
64 bytes from 8e05f02c4b07.one (172.27.0.2): icmp_seq=2 ttl=64 time=0.120 ms
64 bytes from 8e05f02c4b07.one (172.27.0.2): icmp_seq=3 ttl=64 time=0.151 ms
64 bytes from 8e05f02c4b07.one (172.27.0.2): icmp_seq=4 ttl=64 time=0.157 ms
64 bytes from 8e05f02c4b07.one (172.27.0.2): icmp_seq=5 ttl=64 time=0.156 ms
64 bytes from 8e05f02c4b07.one (172.27.0.2): icmp_seq=6 ttl=64 time=0.152 ms
64 bytes from 8e05f02c4b07.one (172.27.0.2): icmp_seq=7 ttl=64 time=0.151 ms
64 bytes from 8e05f02c4b07.one (172.27.0.2): icmp_seq=8 ttl=64 time=0.153 ms
64 bytes from 8e05f02c4b07.one (172.27.0.2): icmp_seq=9 ttl=64 time=0.150 ms
64 bytes from 8e05f02c4b07.one (172.27.0.2): icmp_seq=10 ttl=64 time=0.151 ms
64 bytes from 8e05f02c4b07.one (172.27.0.2): icmp_seq=11 ttl=64 time=0.152 ms
```

a host type network driver works as a host.
When you launch a container using a host network driver, then the network will not be in an isolated environment, but the rest of things apart from the network driver will be in an isolated environment.

When you want to run the docker container with no network driver then, it is a null network driver.

We cannot attach any network to a container that has none network already attached and we cannot attach any network if the container is having a host network attach(host cannot be connected to any other network).

Dockerhub Push commands

This command will build the docker image
docker build --tag ubuntu-mine:latest .

This command will give the tag to the docker image
docker tag ubuntu-mine:latest avian19/custom-ubuntu:latest

This command will push the docker image to Dockerhub/ECR/ACR

docker push avian19/custom-ubuntu:latest

Dockerfiles

The use Of **ENTRYPOINT**

```
root@aman-pathak:/home/amanpathak/Images# cat Dockerfile
FROM ubuntu:16.04
RUN apt-get update && mkdir -p /new/true/
COPY test.sh /new/true/
ENTRYPOINT ["/new/true/test.sh"]
```

```
root@aman-pathak:/home/amanpathak/Images# cat test.sh
#!/bin/bash
echo "Hey! This is $1"
```

```
root@aman-pathak:/home/amanpathak/Images# docker build --tag ubuntu-new .
```

```
root@aman-pathak:/home/amanpathak/Images# docker run -it ubuntu-new
Hey! This is
root@aman-pathak:/home/amanpathak/Images# docker run -it ubuntu-new Aman Pathak
Hey! This is Aman
root@aman-pathak:/home/amanpathak/Images# docker run -it ubuntu-new Aman
Hey! This is Aman
```

Ubuntu and Some other Configurations

```
FROM ubuntu:latest

RUN apt-get update -y

RUN apt-get install nginx -y

RUN apt-get install -y apt-utils

RUN service nginx start

RUN groupadd -r user && useradd -r -g user user

RUN mkdir youtube

RUN chown user:user youtube

RUN chown user:user youtube && touch test123.txt
```

```
WORKDIR app/

RUN echo "This is a text file" > abc.txt

CMD echo "This is For Sure"

USER user

EXPOSE 80
```

Apache2/httpd

```
FROM httpd:latest

COPY . /usr/local/apache2/htdocs/

EXPOSE 80
```

Nginx

```
FROM nginx:1.23.0-alpine

COPY . /usr/share/nginx/html/

EXPOSE 80
```

Nodejs

```
FROM node:16-alpine

WORKDIR app/

ADD ./package*.json ./

RUN npm install

ADD . .

CMD node index.js
```

```
EXPOSE 3000
```

Reactjs

```
FROM node:16-alpine

WORKDIR app/

ADD package*.json ./

RUN npm install --silent

RUN npm install react-script@3.4.1 -g --silent

CMD [“npm”, “start”]

EXPOSE 3000
```

Special Answers

Difference between COPY and ADD

COPY command will copy the same files to the destination folder for example, if you COPY the tar file to the docker container then, the tar file will copy to the docker container.

But if you use ADD command then, it will extract the tar file automatically inside the docker container, and also if you pass any URL of the folder then, ADD command will download that file or folder automatically.

Can I write two CMD commands in a Dockerfile?

No, there is not any benefit to writing two or more CMD commands. If you write two or more commands then, only the last command will execute and other commands will be forbidden. So, always write one CMD command and try to write it at the end of the Dockerfile.

References:

These are some projects that I have done to deploy an application on docker container.

- https://github.com/AmanPathak-DevOps/Apache-Dockerfile.git
- https://github.com/AmanPathak-DevOps/Springboot-Dockerfile
- https://github.com/AmanPathak-DevOps/Nginx-Dockerfile
- https://github.com/AmanPathak-DevOps/Java-Dockerfile
- https://github.com/AmanPathak-DevOps/Tomcat-Dockerfile
- https://github.com/AmanPathak-DevOps/NodeJS-Dockerfile
- https://github.com/AmanPathak-DevOps/Python-Dockerfile

There are some other blogs related to Docker important questions

- Use of EXPOSE Command
- RUN vs CMD vs ENTRYPOINT
- Push your Docker Image to DockerHub

Youtube videos/playlists

- https://www.youtube.com/playlist?list=PL6XT0grm_Tfje2ySztzdhp0HmCjVj5P4z
- https://youtu.be/3c-iBn73dDE?si=2PvlxsY9onbiP195