Containers

What is a Container?
https://www.docker.com/resources/what-container/

What is Docker?
https://docs.docker.com/get-started/overview/

Installing Docker
https://docs.docker.com/engine/install/ubuntu/

Tasks

1. Install docker in ubuntu focal vagrant box through provisioner
2. Deploy https://www.tooplate.com/zip-templates/2129_crispy_kitchen.zip in focal vagrantbox through provisioner

https://github.com/srtimsina/DevOps/tree/master/docker

Running containers
https://docs.docker.com/get-started/

docker container
ls : list container
run : Run a command in a new container
inspect: Display detailed information on one or more containers
top: Display the running processes of a container

restart: Restart one or more containers

attach: Attach local standard input, output and error streams to a running container

stop : stop one or more running containers

start : Start one or more stopped containers

logs: Fetch the logs of a container

stats: Display a live stream of container(s) resource usage statistics

exec: Run a command in a running container

pause: Pause all processes within one or more containers

unpause: Unpauses all processes within one or more containers

rm : Remove one or more containers

export: Export a container's filesystem as a tar archive

prune: Remove all stopped containers

docker container run -P -d nginx

docker container ps
docker container inspect
docker contaienr top

Creating containers

docker container
run: Run a command in a new container

Example: docker container run ubuntu

Flags
--help
--rm : Automatically remove the container when it exits
-d, --detach: Run container in the background and print container ID

-i, --interactive: Keep STDIN open even if not attached

--name: Assign a name to the container

-p, --publish: Publish a container's port to the host

-t, --tty: Allocate a pseudoTTY

-v, --volume list: Bindmount a volume

--mount: Attach a filesystem mount to the container

--network: Connect a container to a network

Exposing and Publishing Ports

Expose:

Expose a port or range of ports

This doesn't publish the port

docker container run --expose 1234 <IMAGE>

Publish

Maps a container's port to a host's port

-p, --publish: Used to list a published container's port to the host

-P --publish-all: Used to publish all exposed ports to random ports

Examples

docker container run -d --expose 3000 -p 80:3000 nginx

curl localhost:3000

This will not give result because we don't have process listening in port 3000

docker container run -d --expose 3000 -p 8080:80 nginx

curl localhost:8080

docker container run -d -p 8081:80/tcp -p 8081/80/udp nginx

curl localhost:8081

docker container run -d -P nginx

Lists all port mappings or a specific mapping for a container

docker container port {CONTAINER_ID}

Executing container commands
3 ways
Dockerfile
During a docker run
Using the exec command

Commands can be one and done commands, long-running commands

Starting a container with a command
docker container run <IMAGE> <CMD>

Execiting a command on a container
docker container exec -it <NAME> <CMD>

Container logging

Docker images
https://docs.docker.com/engine/reference/commandline/images/

https://github.com/srtimsina/DevOps/tree/master/docker

docker images ls -h

ls : list images

pull : Pull an image from a registry

push : Push an image to a registry

inspect : Return low-level information on Docker objects

import : Import the contents from a tarball to create a filesystem image