Docker contd

Containerizing Applications

- Dockerfile is an instruction based approach to create docker images.
- In this approach we create a file with name `Dockerfile`
- Dockerfile contains series of instructions

```
<INSTRUCTION> <VALUE>
```

- Refer Here for all the dockerfile instructions

Most widely used instructions

- FROM: This instruction specifies the base image
- RUN: This instruction executes commands as part of image building
- EXPOSE: This instruction specifies the ports to be exposed
- CMD: This instruction will have command that is used when container is stared
- LABEL: This instruction is used to add metadata

command to build the docker image

- cd in to folder where you have Dockerfile
- command:

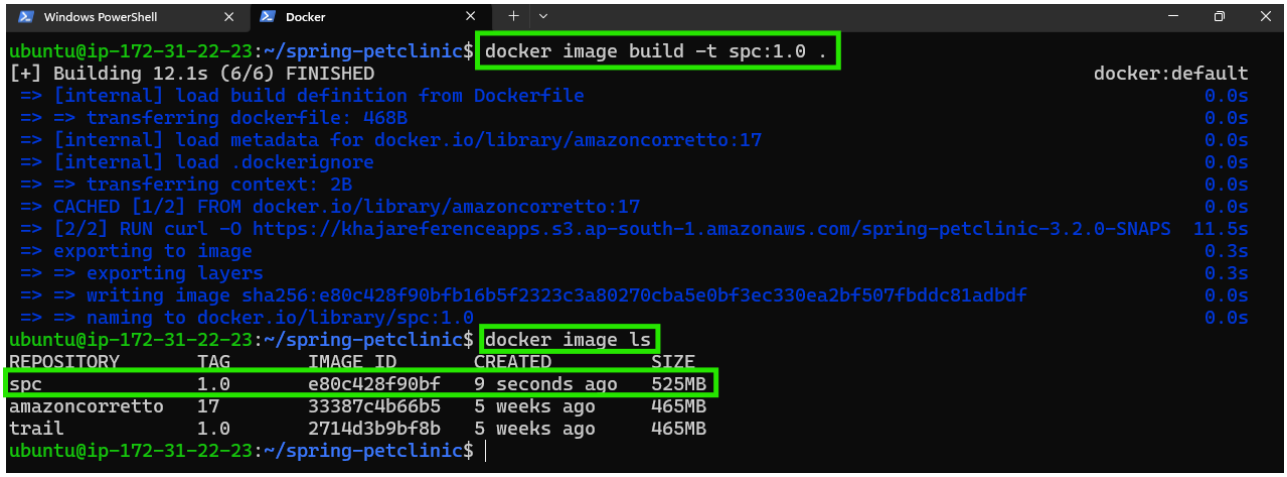
```
docker image build -t <image-name>:<tag> .
```

Dockerfile and image building

- The Dockerfile which we have written is

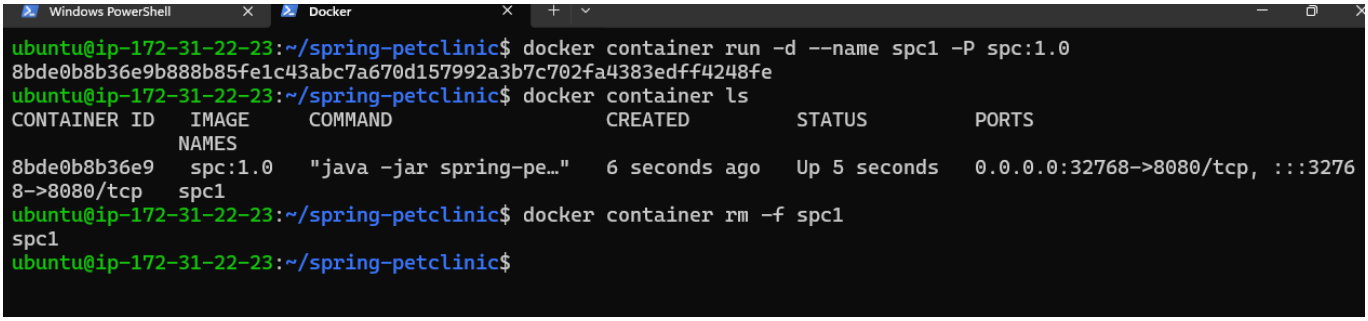
```
# take amazon correto 17 as a base image
FROM amazoncorretto:17
# add metadata
LABEL author="shaikkhajaibrahim"
LABEL project="lt-learning"
# download spring petclinic
RUN curl -O https://khajareferenceapps.s3.ap-south-1.amazonaws.com/spring-
petclinic-3.2.0-SNAPSHOT.jar
# expose 8080 port as spring petclinic needs 8080
EXPOSE 8080
# command to start the application
CMD ["java", "-jar", "spring-petclinic-3.2.0-SNAPSHOT.jar"]
```

- Build the image



- Lets try creating the container with image

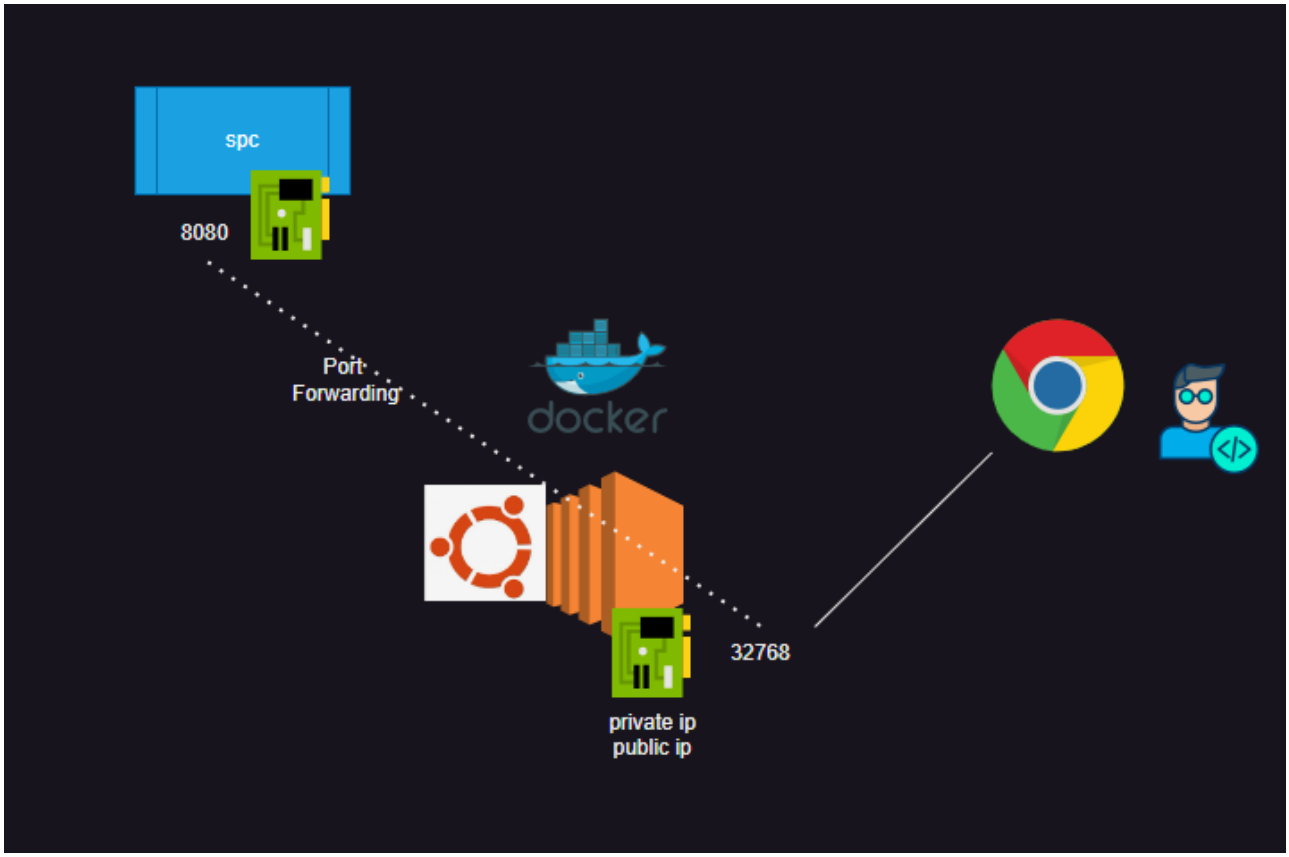
```
docker container run -d --name spc1 -P spc:1.0
```



Port-forwarding in containers

- Applications running in containers needs to be accessed externally.
- Generally containers will be running in an internal network

- To access application in container we use port forwarding



- Port forwarding can be done in two ways
  - static port forwarding: `docker container run -p 10000:8080 -d spc:1.0` In this case ware forwarding 8080 port of application to 10000 port on vm/host. users can access application by using `ip address host on 10000 => http://192.168.10.11:10000`
  - dynamic port forwarding: in this docker engine will expose the application port (specified in Dockerfile) to available port on host(ec2/vm).

Passing values while building the image

- ARG: Refer Here This instruction is used to pass values that effect the image building