DOCKER:

What is docker?

Docker installation commands:

OS:Centos

1.ls

2.sudo yum install -y yum-utils \

device-mapper-persistant-data \

lvm2

3.sudo yum-config-manager \

..add-repo \

https://download.docker.com/linux/centos/docker-ce.repo

4.sudo yum install docker-ce

5.sudo systemctl start docker

6.sudo systemctl status docker

OS:Linux

1.sudo yum update -y

2.sudo amazon-linux-extras install docker

3.sudo service docker start

4.sudo systemctl enable docker

5.sudo usermod -a -G docker ec2-user

6.docker info

7.sudo docker run hello-world

OS:Ubuntu

1.sudo apt-get update

2.sudo apt-get install docker-ce docker-ce-cli containerd.io docker-compose-plugin

3.apt-cache madison docker-ce

4.sudo apt-get install docker-ce=<VERSION\_STRING> docker-ce-cli=<VERSION\_STRING> containerd.io docker-compose-plugin

5.sudo docker run hello-world

HOW TO FULL OFFICIAL IMAGES FROM DOCKERHUB:

1.docker pull httpd(imagename)[defaulty it wil pull latest version image]

2.docker pull httpd:2.4[if you want particular version image]

3.docker images

4.docker search httpd[it will go and search image in docker hub from local]

5.docker run -it -p containerid -d imagename[it->interactive terminal,p->port,d->detached mode]

6.docker run -d --name giveanynametocontainer imagename:latest[it will create the container,container level port number 80][port 80 exposed within container it will not open outside]

7.docker ps[check the running container]

8.docker ps -a[to check running and stooped container both]

9.docker start containerid[to start the conatiner]

10.docker stop containerid[to stop the conatiner]

11.docker stop $(docker ps -aq)

12.docker rm containerid[to delete the container]

13.docker rm $(docker ps -q -a)[to delete the stooped container]

14.docker rmi imageid[to delete the image]

15.docker rmi $(docker images -q)[to delete all the images at a time]

16.docker rmi -f imageid

17.docker exec -it containerid bash[login to container]

18.docker run -i -t --name centos\_server centos:latest[it will pull the image from dockerhub,cretes the container and it will go inside the container]

DOKERFILE:

FROM: to pull the base image

RUN: to execute commands

CMD: to provide defaults for an executing container

ENTRYPOINT: to configure a container that will run as an executable

WORKDIR: to sets the working directory

COPY: to copy a directory from your local machine to the docker container

ADD: to copy files and folders from your local machine to docker container

EXPOSE: informs docker that the container listens on the specified network ports at runtime

ENV:to set environmental variables

Requirment:Install tomact on Centos

\*Pull centos from dckerhub FROM

\*install java RUN

\*Create /opt/tomcat directory RUN mkdir

\*change work directory to /opt/tomcat WORKDIR

\*Download tomcat packages RUN

\*Extract tar.gz file RUN

\*Rename to tomcat diretory RUN

\*Tell to docker that it runs on port 8080 EXPOSE

\*start tomcat service CMD

AFTER WRITEING DOCKERFILE BUILD IT USING BELOW COMMANDS:

\*docker build -t imagename .

\*docker run -it -p 8090:80 -d imagename[create the container and run the container by assiging port]

HOW TO PUSH IMAGE TO DOCKER HUB

1)docker login

2)docker commit containerid

3)docker tag imageid 8105129514/createdimagename

4)docker push 8105129514/createdimagename

DOCKER VOLUME:

Volume:directory inside container.

Bind Mount:link to a directory on your computer from within docker.

Why we need docker volume?

1)Data is persistant

2)Volumes are easier to backup and migrate.

TYPES:

1)anonymous volumes

2)named volumes

3)host volumes or bind volumes

1)Anonymous volumes

Commands to create anonymous volume

1)docker run

-v /data01(directory name)[it creates container and directory /data01 under directory /var/lib/docker/volumes/randam-hash/\_data]

2)Named volumes

Commands to create anonymous volume

1) docker run

-v indiqube\_data01\_vol:/data01[it creates container and directory /data01 under directory /var/lib/docker/volumes/indiqube\_data01\_vol/\_data]

3)Host volumes or Bind Volumes

Commands to create anonymous volume

1) docker run

-v /opt/data01:/data01[it creates container and directory /data01 and also it will create directory /opt/data01]

COMMAND TO CREATE ANANOMYOUS VOLUME

1.docker volume ls

2.docker run -it --name vtwebuat01 -v /data01 nginx /bin/bash[inside root run this command]

3.df -h

4.cd /data01 , touch file1 file2

5.find / -name file1[session2]

6.docker ps [session2]

7.docker inspect volumename

8.exit(session1)

9.docker rm createdcontainerid

10.find / -name file1(session2)(still exist the file)

COMMAND TO CREATE NAMED VOLUME

1.docker volume ls

2.docker run -it --name vtwebuat02 -v vtwebuat02\_data01\_val:/data01 nginx /bin/bash

OR

docker volume create vtuatweb03\_data01\_vol

docker run -it --name vtuatweb03 -v vtuatweb02\_data01\_vol:/data01 nginx /bin/bash

3.df -h

4.cd /data01 , touch file1 file2

5.find / -name file1[session2]

6.docker ps [session2]

7.docker inspect volumename

8.exit(session1)

9.docker rm createdcontainerid

10.find / -name file1(session2)(still exist the file)

COMMANDS TO CREATE HOST VOLUME OR BIND VOLUME

1.docker volume ls

2.cd /opt

3.mkdir data03

4.chmod 777 data03

5.cd /opt/data03

6.mkdir /opt/data02

7.docker run -it --name vtwebuat03 -v /opt/data02:/data02 nginx /bin/bash

8.docker ps -a(session2)

9.docker volume ls(there is no new volume)(session2)

10.cd /opt/data03(do ls there is no files)(session2)

11.cd /opt(session1)

12.touch file3 file4(session1)

13.ls(session2)[created files are available]

TO DELETE THE DOCKER VOLUME COMMAND IS:

1)docker volume rm $(docker volume ls -q).

HOW TO CREATE DATABASE CONTAINER:

1)docker pull mysql:latest

2)docker images

3)docker run --name db -d -p3306:3306 -e MYSQL\_ROOT\_PASSWORD=123 mysql:latest

4)docker ps

5)docker exec -it db /bin/bash

6)mysql -uroot -p123

7)show databases

8)exit

9)exit

10)docker ps

11)docker stop db(containername)

12)docker ps(no ruuning container)

13)docker build -t suchi/mysql01 .

14)docker images

15)docker run -it -p 3306:3306 -d suchi/mysql01

16)docker exec -it containername /bin/bash

17)mysql -ugowtami -p1234

18)show datbases

19)use users;

20)select \* from users;

21)select \* from users where name='lisa';

DOCKER NETWORK:

1.docker network

2.docker network ls

3.docker network create --subnet 10.1.0.0/16 --gateway 10.1.0.1 --ip-range 10.1.4.0/24 network\_1

4.docker network ls

5.docker network inspect network\_1

6.docker run -it --name network\_container --network network\_1 -d ubuntu

7.docker inspect network\_container | grep IP(it will the IP address range of given)(10.1.4.0)

8.docker run -it --name network\_container1 --network network\_1 -d ubuntu

9.docker inspect network\_container1 | grep IP(it will the IP address range of given)(10.1.4.1)

10.docker network rm networkname(stop the containes and delete network)

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