**Roles and Responsibilitis in SonarQube Server**

---------------------------------------------

Install the SonarQube Server

Configure Sonarqube Server Details in pom.xml

Creating Users / Configure LDAP Server

Creating Groups

Create the Quality Profiles as per Project requirement.

Create the Quality Gates as per Project requirement.

**Roles and Responsibilitis in Nexus Server**

-----------------------------------------

Install the Nexus Server

Create the Repositories (Maven2 - hosted,Proxy and group, Docker)

Configure Nexus Repository Details in pom.xml and credentails in settings.xml

--------------------------------------------------------------------------------------

Creating Users / Configure LDAP Server

--> docker build -t Hostname/ip ofRepo:port/Appname:version .

ex: docker build -t 123.455.697.56:8081/appname:1 for private repo

docker build -t vithalterdal/appname . (for docker repo)

Dockerfile

-----------

FROM tomcat:8.8.20-jre8

COPY target/\*.war /user/local/tomcat/webapps/appname.war

incase of public Repo

docker login -u vithalterdal -p \*\*\*\*\*

incase of Private Repo

docker login -u vithalterdal -p \*\*\*\*\* <URL>

Ex: docker login -u admin -p admin123 nexus.tcs.com

Ex: docker login -u admin -p admin123 198.789.321.12:8083

Qtn: How can you move your image from 1 server to another server without repository

Ans:(docker save to docker load and SCP)

1) Create tar file with command

docker save imagename -o newimagename.tar

2) SCP from 1server to another server

3) docker load -i newimagename.tar

**Qtn: What is dangling images**

Ans : The images which is not taged to any repository it contains only image name is called danglig images

**Qtn:Home directory of docker ?**

Ans : /var/lib/docker

Commands

docker logs container\_name

docker inspect container\_name

**Qtn: How to trouble shoot the containers?**

Ans: Docker logs container\_id

by system error and system out we will find the errors

and check docker proccess

docker top container\_id--to check process on which container

docker stats container\_id to see cpu utilization it will show max and used memory and cpu utilization defualt merory is 983mb~1Gb

Qtn: How to execute some commands on running container

Ans: docker exec container\_name linuxcommand

docker exec appname ls / ----->tocheck root directory

docker exec appname ls

docker exec appname pwd

docker exec appname cat /etc/\*release

\*\*all the containers uses system kurnels

Qtn: How to login into a container

Ans: docker exec -it container\_name /bin/bash

If some containers not having bash then

docker exec -it container\_name /bin/sh

Qtn: How to copy files from container to system or system to container

Ans: docker cp containername:/usr/local/tomcat/logs/catalina.out cat.out(for current directory)--cont to system

docker cp file.txt containername:/usr/local/tomcat/logs/test.txt

Qtn: docker kill vs docker stop

Ans: docker stop will send SIGTERM and SIGKILL after grace period

docker kill will send SIGKILL

Dockerfile--> Dockerfile is the input for the docker images.

In Dockerfile we write the instructions using docker file keywords.

Docker will process these instructions from top to bottom.

Qtn: How many FROM keywords you can have in a Dockerfile ?

Answer: yes more than 1 we can have that concept is call multistage Dockerbuild

Qtn: What is difference between COPY and docker cp

Ans: COPY is used to copy files from local system to image

docker cp will copy from local to container and also from container to local system

Qtn: Diff between CMD and Entrypoint

Ans: CMD commands can be overriden while creating a container.Entrypoint commands cant be overridden while creating a container

ex: CMD java -jar jarfileName.jar

--CMD commands will be execute as child process under /bin/bash or bash/sh main process .CMD command will be executed as /bin/bash -c "command"

--Entrypoint commands will be executed as main process /bin/<command>. CMD command will be executed as /bin/bash -c "command".

https://github.com/MithuntechnologiesDevops===Reffer for Dockerfiles

In which scenario we can use both CMD & Entrypoint

We can use CMD & Entrypoint together if we have to pass/overrite arguments for your entry point

EX: sh catalina.sh

CMD run

ENTRYPOINT ["sh","catelina.sh"]

Output = sh catelina.sh run

while creating container we can mension CMD ex

docker run imagename restart

Important QTNS.

Difference between RUN AND CMD.

Difference between ENTRYPOINT AND CMD.

CAN we can more CMD in a dockerfile

Can we have Entrypoints in a docker file

Basically CMD And Entrypoint are used to start the process while creating ours container.

WE can have more than one entrypoint and CMD but latest one will be executed.

Qtn: can we have more than one process in a container?

yes we can have but it is no recommended.bcz hole concept of docker is isolate process.

how? create shell script copy the shell Script with COPY then with CMD or Entrypoint run the shell script

VOLUMES

------------

two types

1) bind mounts

2) volume

1) bind mounts(not recomended)

-------------------

\*\*\*We can't do volume mapping for running container.While creating container only we need to do volume mapping.

When we use bind mount, a file or directory on the host machine is mounted into a container.

The directory is referenced by its fill or relative path

EX: create directory

mkdir mongodbbackup

docker run -d --name mongo -v /home/ubuntu/mongodbbackup:/data/db --network flipkartnetwork mongo

(host path) (container path)

If u delete container data still exist and if u create a container with same volume mounting ur date retrived and attaced to the mount point

2)Volumes

--------------

volume are prepered way for persiting data generated and used by docker containers.

while bind mounts are dependet on the directory structure of the host system.

Volume are completely managed by docker.

volumes are easier to backup or migrate.

we can manage volumes using docker cli

volumes will work in both linux/windows

volume drivers we let us to store volumes on remote servers or cloud provider.(ex:s3,ebs,efs, nfs)

How do you take jenkins backup or jenkins job migration>

copy the /var/lib/jenkins ---working directery

install jenkins in 2nd server and reload the jobs

Same for docker /var/lib/docker migrate this folder

docker volume create -d local mongobkp

docker volume create -d local volumewithlimit --opt "size=50m" (notworking but we ca set like this)

ex: docker run -d -v volumename:containerpath --network networkname imagename

docker run -d --name mongo -v mongobkp:/data/db --network flipkartnetwork mongo

REX-Ray (supports ebs,efs.s3)volume plugin for cloud storage to attach to container

install this plugin

docker plugin install rexray/ebs EBS\_ACCESSKEY=AWS ACCESS KEY EBS\_SECRETKEY=AWS SECRET KEY

docker plugin ls

docker volume create -d rexray/ebs mongoebsbkp

Volume mapping while creating a container

docker run -d --name mongo -v mongoebsbkp:/data/db --network flipkartnetwork mongo

What is monolithic VS micro-services Architechture

What is difference between global and replica mode

By default service will be created in replica mode with 1 replica if we dont mension.

docker service create --name <serviceName> -p <hostPort>:<containerPort> --replicas <NoofReplicas> <imageName>

In replica mode we can scale up amd scale the number of replicas(containers).

Global mode will create container in all the machines of docker swarm.We can't scale up and scale down the conatiners.

when you add a new machine to docker swarm container for the global mode services will be created automatically in newly added machines

docker service create --name <serviceName> --mode blobal -p <hostPort>:<containerPort> <imageName>

EX: docker service create ngnix -p 80:80 --mode global nginx

Qtn: how to place container in specific machine in docker swarms

Ans: with labels and constraints

docker service create --name javawebapp --mode global --constraint "node.role==worker" dockerhandson/java-web-app only to run in worker machine.

to constrain on the basic of application type for each node(making app and db group seperatly)

docker node update --lable-add "name=appserver" nodeID(to get node id docker node ls)

docker node update --lable-add "name=dbserver" nodeID(to get node id docker node ls)

--now

docker service create --name mavenwebapp -p 9090:8080 --replicas 2 --constraint "node.labels.name==appserver" dockerhandson/maven-web-app.

Qtn: if this machine itself is gone down what will happen?

Anw: application will go down it will not create another instance unless untile other macine have same condition and constraint

Qtn: what is docker stack?

stack is a collection of services .We can manage group of services using docker stack in docker swarm.

Qtn: what is docker service?

Ans: its one or more containers(replicas) specific to one image in docker swarm.

docker swarm init

it will create default overlay network naming ingress for swarm scope.

Docker Swarm Quetions and answers

These are for two different applications for one client

Qtn: How many Docker machines you have?

Ans:30 to 40 (including jenkins docker nexus etc)

Qtn:What is the capacity of your server?

Ans: 128GB Ram ,64 core processer

64 ram 32 core processer

32Gb ram 12 core processer

Qtn:How many docker-swarm cluster u have?

DEV:2 managers 6 workers

QA:3 managers 10 workers

Prod:3 managers 10 workers

Qtn: How many manager and how many workers u have in your production server?

Ans: 3 manager 10 workers

Qtn: How many services you have in your application/docker swarm?

Ans: We have about 35 to 40 microservices

Qtn: How many stack?

Ans: 2 stacks

Qtn: Totally How many containers?

Ans: 200 to 250 containers

Qtn: How many containers in one machine?

Ans: depends on capacity of machine

Qtn: Load balancer in docker?

Ans: External ELB is used with docker swarm--(ELB for only load balancing)

Docker swarm will not create another server if it is down ..it orchestrate the services.