**DOCKER CONTAINERIZATION**

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What is Docker?

Docker is a software containerization platform which uses the host operating system to run the application on top of host OS with the application dependent binaries and libraries.

Docker is abstraction of hardware while container is abstraction of the OS. Each container is a micro service.

VM vs Docker?

Docker Architecture:

Docker Client

Docker Engine

Host

C1 C2 C3

Because docker Is a tool need to install docker utilities like docker engine and docker client on host OS to communicate with each other. Docker client will send Rest API’S to interact with the docker engine through docker commands. Docker engine gives back output to the docker client.

Docker bridge(d0) will be created by default when docker is installed. Host OS and container will communicate through docker bridge.

(Container port number) (Name of the container)

# docker run -p 80:8080 nginx nginx

(Name of the image)

(Host port number)

In the above command port 80 refers to the host whereas 8080 refers to the application/container. Whenever there is request on the port 80 of the host it redirects the traffic to the application/container running on port 8080.

The container only holds the application and related libraries, so containers are light weighted and also easy to create and destroy.

Docker Image:

Docker images are the running instances of the container. Docker file contains set of commands as an instruction to create the docker image. Each instruction forms one layer of the image. All these layers are readable layers. With all these instructions we can build a docker image, by running this image container is created which is writable layer.

Dockerfile instructions:

e build a docker image by giving set of instruction in Dockerfile.

# cat Dockerfile

FROM -> Base platform

MAINTAINER -> it can be name/email details of company/person

RUN -> to perform interactive shell commands

COPY -> Instruction for building image

ADD ->

CMD -> Instruction to run image as a container

ENTRYPOINT ->

CMD and ENTRYPOINT are used for the image to interact with the container while FROM, MAINTAINER, RUN and COPY are instruction for building an image