Virtualization

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This is the process of running multiple OS's parallelly on

a single pice of h/w.

Here we have h/w(bare metal) on top of which we have host os

and on the host os we install an application called as hypervisor

On the hypervisor we can run any no of OS's as guest OS

The disadvantage of this approach is these application running on the

guest OS have to pass through n number of lavers to access the H/W

resources.

Containarization

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Here we have bare metal on top of whcih we install the host Os

and on the hsot OS we install an application called as Docker Engine

On the docker engine we can run any application in the form of containers

Docker is a technology for creating thse containers

Docker achive what is commonly called as "process isolation"

ie all the applications(processes) have some dependency on a specific

OS.This dependency is removed by docker and we can run them on any

OS as containers if we have Docker engine installed

These containers pass through less no of layers to access the h/w resources

also organizations need not spend money on purchasing licenses of different

OS's to maintian various applications

Docker can be used at the the stages of S/W development life cycle

Build---->Ship--->Run

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Day 2-3

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Setup of Docker on Windows

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1 Download docker desktop from

https://www.docker.com/products/docker-desktop

2 Install it

3 Once docker is installed we can use Power shell

to run the docker commands

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Create an ubuntu linux machine using vagrant

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1 Download oracle virtual box from

https://www.virtualbox.org/wiki/Downloads

2 Install it

3 Download and install vagrant

https://www.vagrantup.com/downloads

4 Download the vagrant file and copy it into an empty folder

5 Open cmd prompt

6 Change directory to the folder where the vagrantfile is copied

cd path\_of\_folder

7 vagrant up

8 USername and password is:vagrant

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Using AWS

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1 Login in AWS account

2 Create ane new Ubuntu 20 instance

3 To connect to this ubuntu instance use gitbash

https://git-scm.com/downloads

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Installing docker on Linux

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1 Open get.docker.com

2 Copy and paste the below 2 commands

curl -fsSL https://get.docker.com -o get-docker.sh

sh get-docker.sh

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Images and Containers

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A Docker image is a combination of bin/libs that are necessary

for a s/w application to work.Initially all the s/w's of docker

are available in the form of docker images

A running instance of an image is called as a container

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Docker Host: The server where docker is installed is called

docker host

Docker client: This is CLI of docker which accepts the docker commands

from the users and passes to a background process called docker deamon

Docker deamon: This accepts the commands comming from docker client

and routes them to work on docker images or contaienr or the registry

Docker registry: This is the location where docker images are stored

This if of 2 type

1 Public (hub.docker.com)

2 Private: This is set up on one of our internal servers

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Images that are designed to work on Linux will work on Windows BUT images that are designed to work on Windows itself will not work on Linux



