

2018 MAY

Week 19

# Not in AWS But clear ECR Concept

## Docker Concept Code By Harry



FRIDAY

11

131-234

✓ Download Virtual Box (Because Windows Home)

✓ Download Docker Toolbox for Windows Home

10★ Install Virtual Box

\* Install Docker Tool Box (Uncheck ~~Virtual Box~~)

11 Open Docker Give him time to install (Automate)

Why Docker?

Problem Statement ⇒ (1) Sometime apps work on your machine and same config. data not work on someone else machine.

(2) Some client ask you to put all SW require to execute any task on his machine (Server) / you don't know what task you had perform, what version you install etc.

(3) Virtual Machine installing need ISO file, CPU, Memory and so many things. Hard coded (Heavy weight / Not pre define) Docker Config. & extension.

Soln :- Docker #

In docker, Container extract needed resources from server/system and made Container (Smart) - Now onward if you anytime need to install or run any SW Just go take docker, Run Container & ~~it's~~ Aasilahha...

Container hold images of SW and while unloading we get option to run image & extract important files & SW's.

Notes Hence many hassle get reduce - as we have all error free SW to perform tasks with all Config & extension.

Adv

Light weight  
Platform independent  
Cloud based image

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(3) Virtual Machine installing need ISO file, CPU, Memory and go many things. Hard Coded / Heavy weight / Not pre define { "Docker" } " Make Life Simple " { Config. & extension. }

Sol<sup>n</sup> :- Docker

In docker, Container extract needed resources from server/system and made Container. (Smart) - Now onward if you anytime need to install or run any SW Just go take docker, Run Container & off Allahha...

Container hold images of SW and while unloading we get option to run image & extract important files & SW's. Hence many hassle get reduce - as we have all error free SW to perform tasks with all Config. & extension.

Adv

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Platform independent

Cloud based image

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SATURDAY

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docker version

→ get all detail about docker

9 Client → You

Server → docker Server run on Linux.

10

What is Docker?

→ Docker is entire ecosystem of Docker products (Containers)

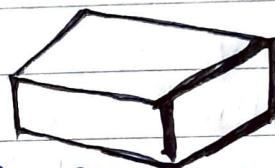


→ It includes docker clients, Docker Server, Docker machine, Docker Hub, Docker Compose etc.

By using this all tools we create Container

2

What is Container?



of required SW

Container hold images  
Container can pull & push as per requirement on any machine

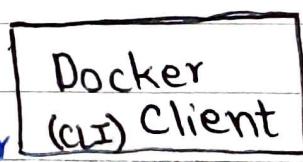
Container has their own SW & Resources.

3

Docker Client & Server

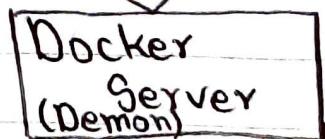
Docker client is you (Local Host)

Docker client act as a Assistant for Docker Server - When you ask for Take every chance. Drop every fear.



13 SUNDAY any request docker client

check in local Cache & if present  
then show it



Daemon (Virtual Machine)

otherwise go to docker Hub & download & Put into Cache, install it & then make image Container of Game

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Docker Client is a tool we issue Commands to for reaching out to docker daemon.

MONDAY

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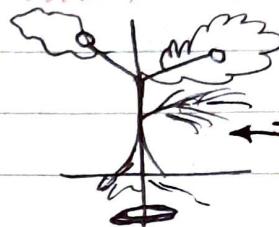
Docker Daemon is a service that runs on your host Operating System. It is responsible for running Containers.

Image

← Seed

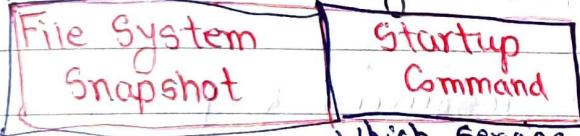
Has all Information.

Resource Container



Tree (Water Land, Soil)

all data in Image



Has all Resources.

CPU, memory, HDD.

Caution - Container Consume Resources of your System - min<sup>n</sup> Container execute

For better performance.

CLI



demand masala Dosa

Serve Me

Daemon Chef

1 Check Material in kitchen

if found then Serve Me

Process Material & make masala dosa (Resources apply)

Put material in kitchen (cache)

3

Notes  
if not in kitchen then go to market  
Bring material (image)

Never give up your dreams.

# 15

TUESDAY

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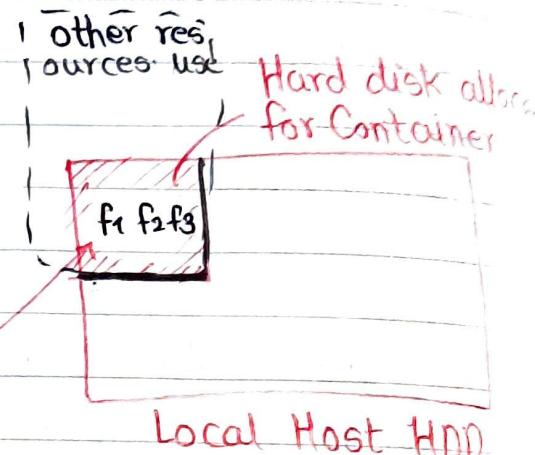
## Container

- 9 Container is a process It has there Set of Images (SW), HW resources from Personal Computer.
- 10 Container dedicatedly allocate resources & SW to perform particular task.
- 11 Docker manage Container.

12

## IMAGE

file snapshot	Startup Command
f1 f2 f3	



- 3 When execute Container it uses resources & perform task.

Main Computer kernel manage resources.

kernel Management (Linux Specific)

## Isolation

Specific set of resource provide & have to perform within that

## Control Group

limit How Much resource one task can get

Notes

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`docker run = docker Create + docker Start`

`docker Create hello-world --> Create container with (Digest)`

`docker Start -a <id from Create> --> (-a) means attach to that Container`

& give output to my Terminal WEDNESDAY

Week 20 `docker run busybox` --> Run Container

If already not present  
then go to docker hub & bring from there.

As you run docker run Command - Docker client check in system cache if not present then ask to Docker Server (Daemon) it go to internet & from docker Hub bring that Container .(Image)

Container Contain file Snapshot & Startup Command

Once Complete send me back to Docker Client.

To check file Snapshot in Container

`docker run busybox ls` --- list file & throw back.

`docker run busybox sh` -> run in shell & Throw back

List of Container

`docker ps` --> Running Container

`docker ps --all` --> all running & stop Container

Stop Container

Notes `docker stop <Container ID>` --> Stop Container resource utilisation

`docker kill <Container ID>` --> Forcefully kill - Container not respond  
Stop write away

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THURSDAY

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docker exec -i -t <Container ID> sh

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9  
insert whatever Human  
write into Container  
To access Input O/P

10  
Container Shell (cmd)

## Real Life Application

11  
Code  
Write to  
Create Website  
Code

12  
index.php  
1.html  
utils

13  
✓ GIT

Slow Config.  
needed  
for  
development

Environment

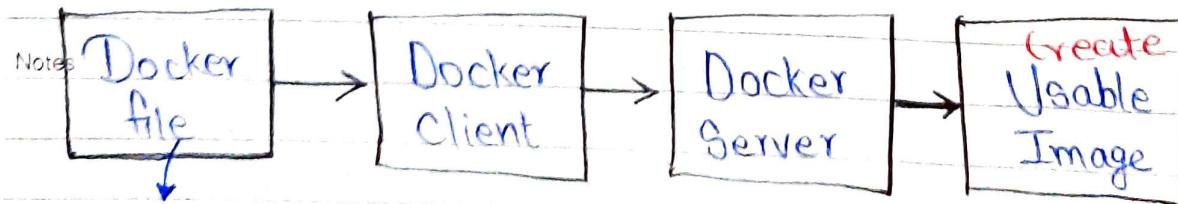
2  
Apache 2  
Python 3  
Configuration  
Extension

✓ Docker

3  
Two ways To approach

Step 1 way → Tell user to download image from docker hub  
of Apache 2 & install extension , Config. needed  
for that task to execute.

Step 2 way : Upload your image on Docker with akhayi image  
as receiver download that image run & get pre  
define Configuration & extension in it.



Contain all the info. for running your s/w in a base container  
Plain text file

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docker build .

18. FRIDAY 138 227  
docker build -t <username>/<image-name>:version

How to Create a Custom Image

Step 1:- Choose a Base image [e.g.: Ubuntu, Linux, etc.]

Step 2:- Run Commands for your SW. [As per your modification]

Step 3:- Specify the base command to be run at Startup [Generate docker Image]

In VS - Create Folder - File with name Dockerfile

# Specify the base image - (I)

FROM alpine/centos (version) OS define.

# Download & install dependencies - (II)

RUN apk add --update redis App1^n.  
Packages. needed to run.

# Startup Command

CMD ["redis-server"]

Initialise.

In cmd Terminal,  
docker build .

Docker Created.

Process

① Pull alpine library

Notes ② Run redis - Update file System - remove first Container - Take Snapshot Replace content with new data in new Container.

③ Build new Container.

To Take SnapShot

docker commit -c "CMD \"redis-server\" <Container number>"

Learn from yesterday, Live for today, Hope for tomorrow.