BATCH: 149

16/10/2023

DT/NT : DT

LESSON : DevOps

SUBJECT: Docker 1

Docker commands

Basic-operations

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What is 

???

What is Docker?

"DOCKER" refers to several things. This includes an open-source community project which started in 2013; tools from the open-source project; Docker Inc., the company that is the primary supporter of that project; and the tools that the company formally supports.

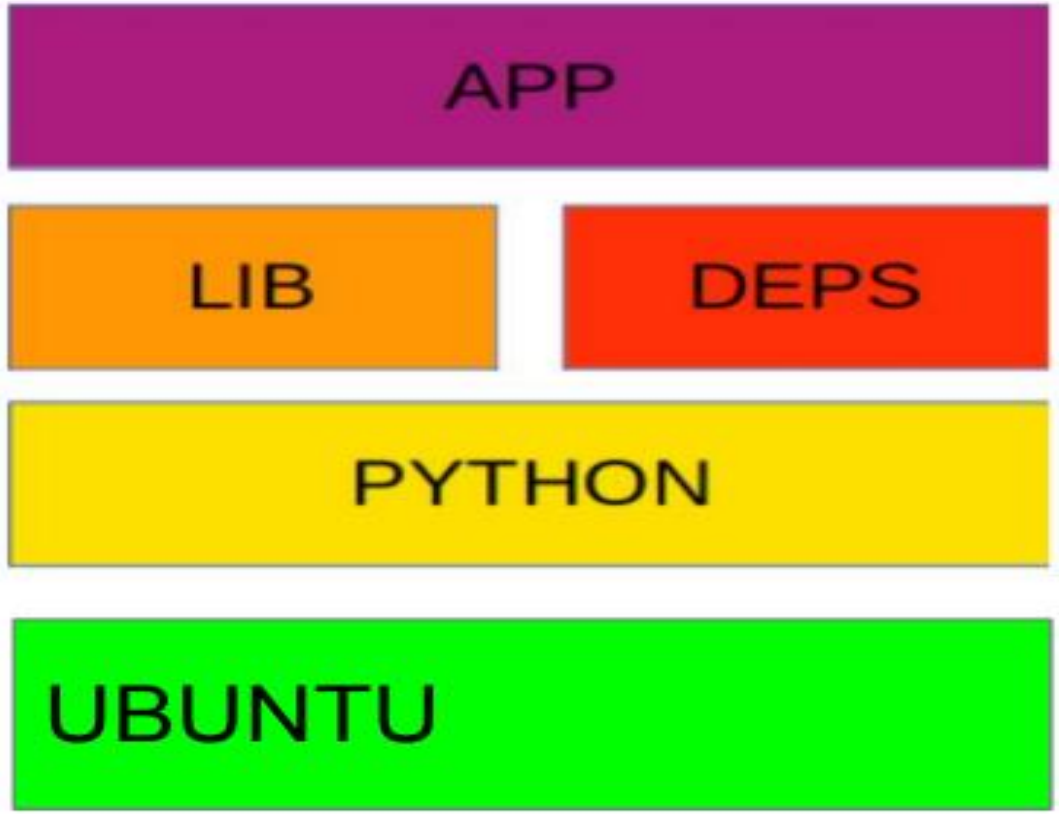
- Docker as a "Company"
- Docker as a "Product"
- Docker as a "Platform"
- Docker as a "CLI Tool"
- Docker as a "Computer Program"

```
ubuntu@clarusway: $ docker version
Client: Docker Engine - Community
 Version:           19.03.8
 API version:       1.40
 Go version:        go1.12.17
 Git commit:        afacb8b7f0
 Built:             Wed Mar 11 01:25:46 2020
 OS/Arch:           linux/amd64
 Experimental:      false

Server: Docker Engine - Community
 Engine:
  Version:          19.03.8
  API version:      1.40 (minimum version 1.12)
  Go version:       go1.12.17
  Git commit:       afacb8b7f0
  Built:            Wed Mar 11 01:24:19 2020
  OS/Arch:          linux/amd64
  Experimental:     false
 containerd:
  Version:          1.2.13
  GitCommit:        7ad184331fa3e55e52b890ea95e65ba581ae3429
 runc:
  Version:          1.0.0-rc10
  GitCommit:        dc9208a3303feef5b3839f4323d9beb36df0a9dd
 docker-init:
  Version:          0.18.0
  GitCommit:        fec3683
ubuntu@clarusway: $ _
```

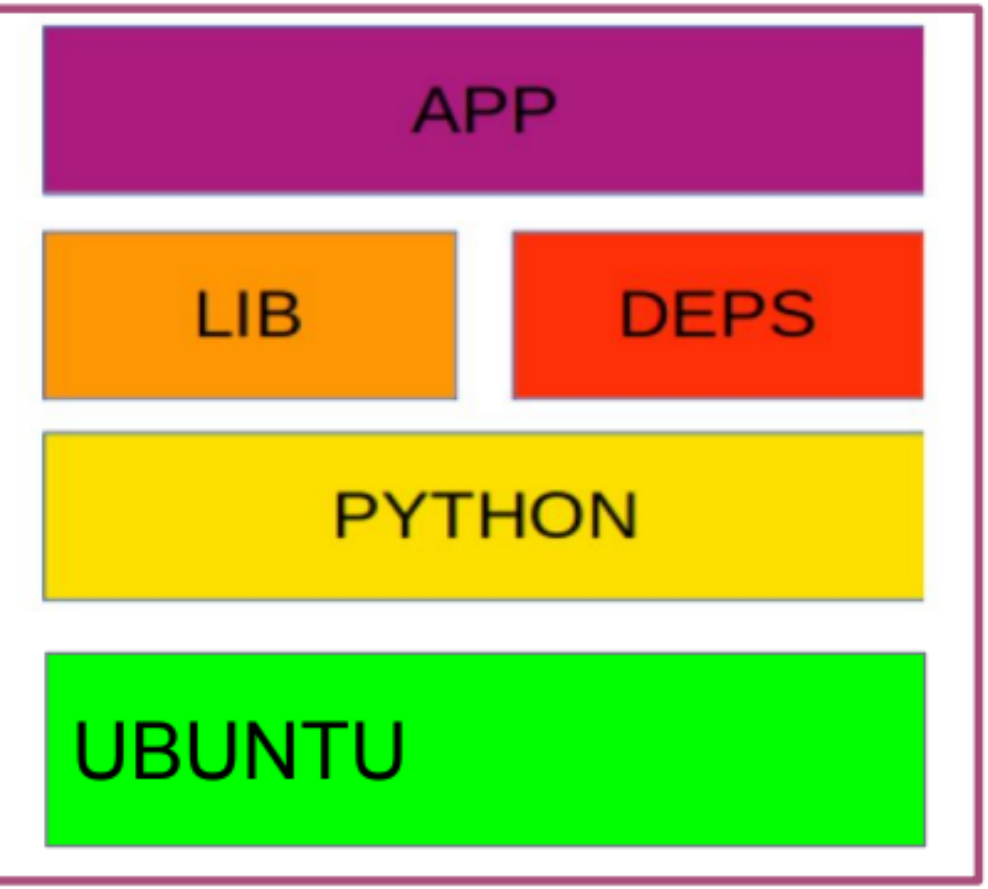
Docker?

What is Container?



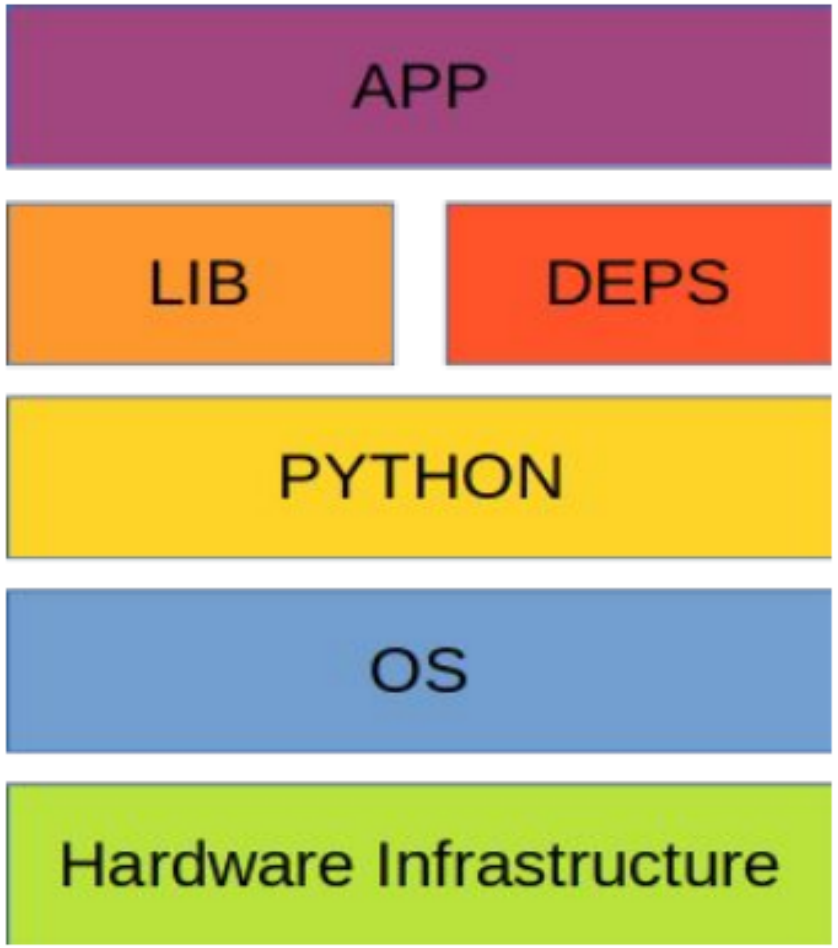
What is Container?

What is Container?



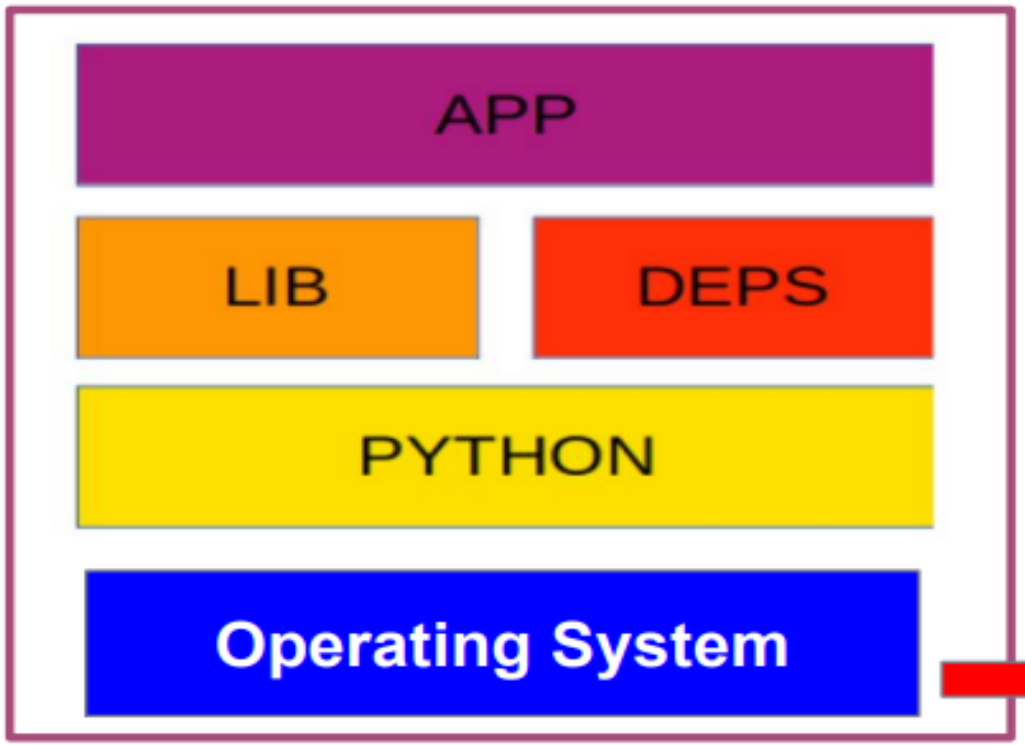
Containerized Application

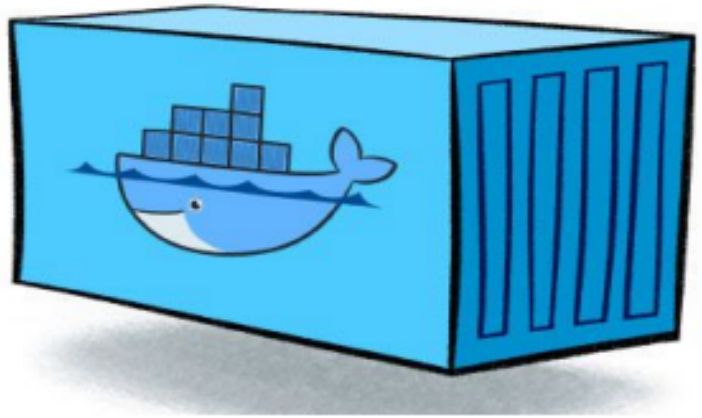
What is Container?



Kernel, Media Player, Browser, Calculator, Solitaire, GUI, Calendar, Paint ...

What is Container?





Container

Just required programs for application (without kernel)

What is Container?

Docker vs. VMs

Virtual Machine

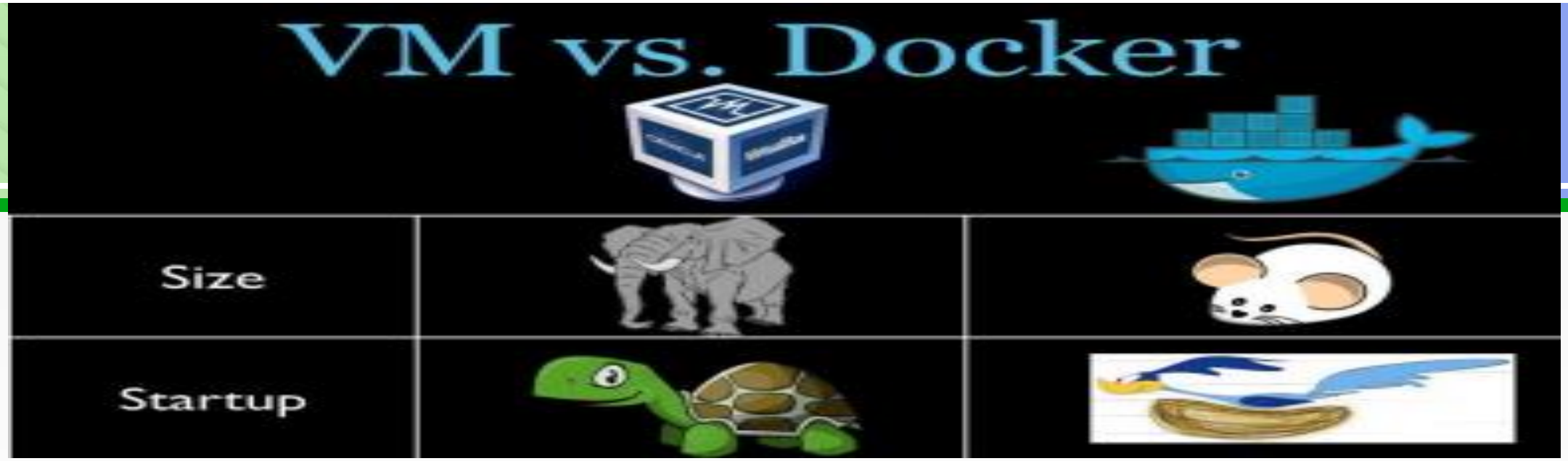
Containers

Docker containers are executed with the Docker engine rather than the hypervisor. Containers are therefore smaller than Virtual Machines and enable faster startup with better performance, less isolation and greater compatibility possible due to sharing of the host's kernel. Hence, it looks very similar to the residential flats system where we share resources of the building.

Docker vs. VMs

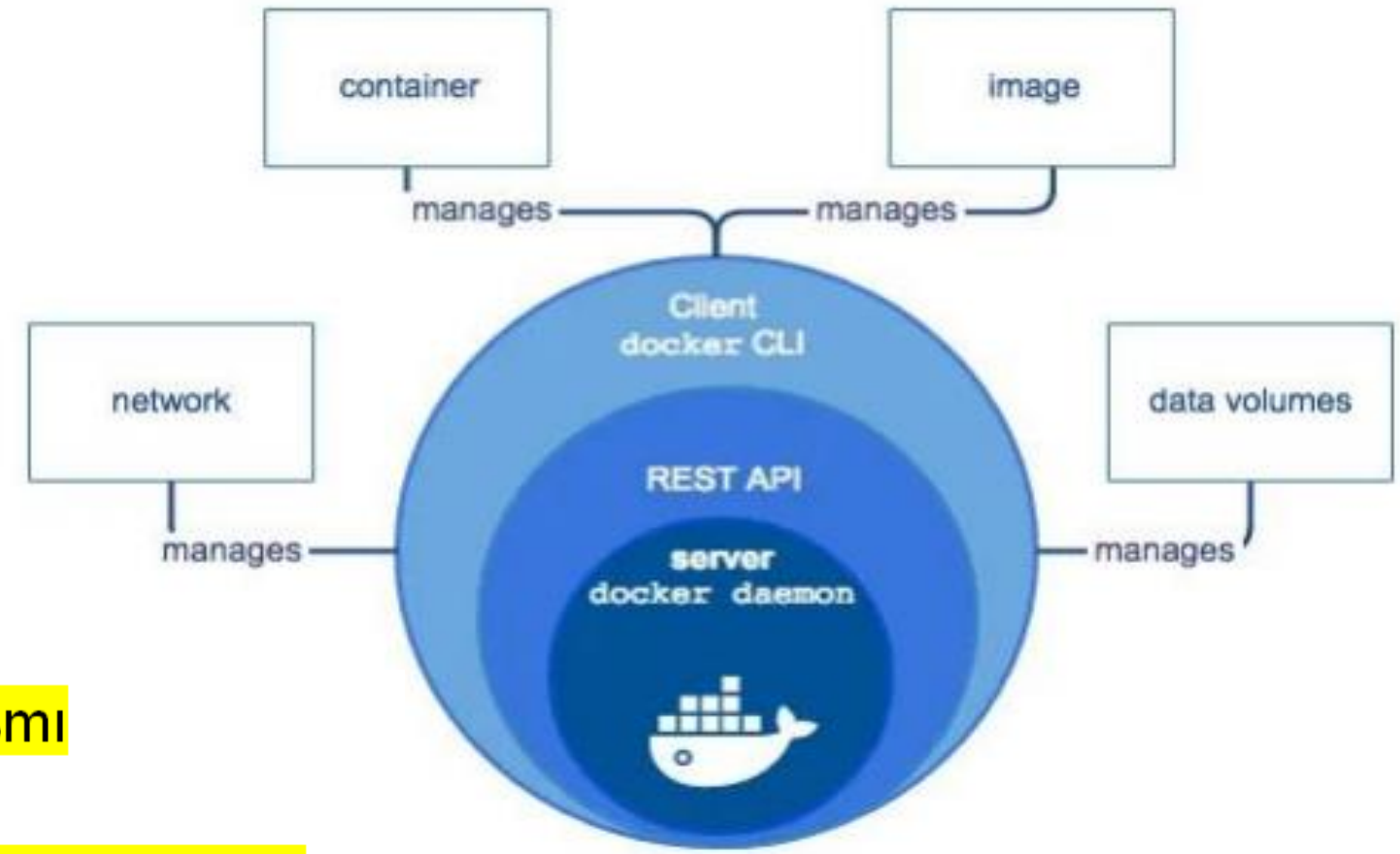
Docker ve SM farkları:

1. Bütün konteynırlar aynı kernel ı kullanır. SM de ise her SM kendi işletim sistemini ve kendi kernel ını kullanılr.
2. Konteynırlar saniyeler içinde ayağa kalkar. SM ler ise dakikalar sürüyor.
3. Konteynırlar çok hafiftir KB/MB ile ölçülür. SM iler ise GB larla.
4. Daha az kaynak kullanır, daha fazla kaynak kullanır.
5. Bir laptopta birçok docker konteynır kurulabilir. SM ise bir laptop ta en fazla birkaç tane kurulabilir.



Docker Architecture

Docker uses a client-server architecture. The Docker client talks to the Docker daemon, which does the heavy lifting of building, running, and distributing your Docker containers. The Docker client and daemon can run on the same system, or you can connect a Docker client to a remote Docker daemon. The Docker client and daemon communicate using a REST API, over UNIX sockets or a network interface.



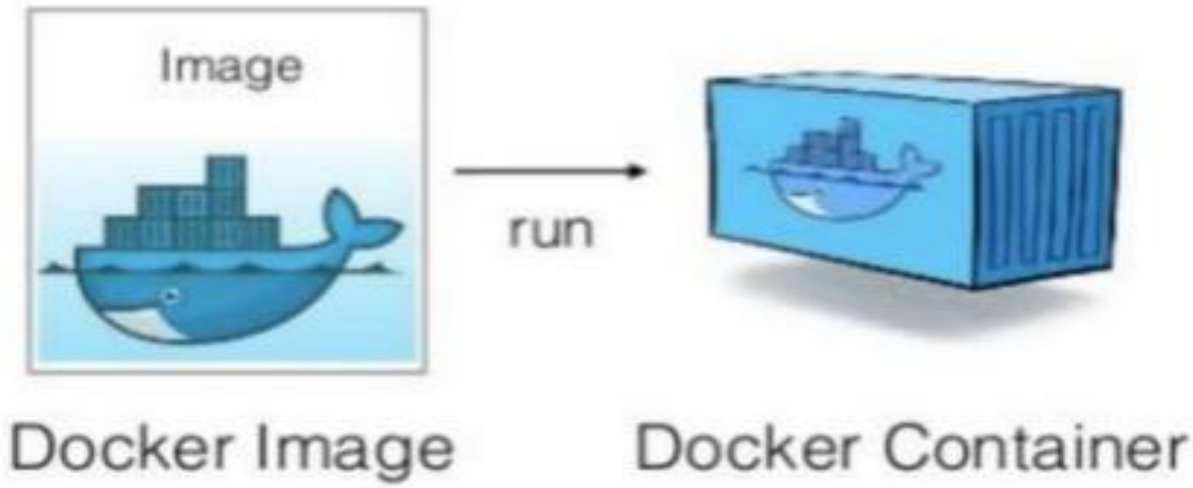
Docker daemon programları çalıştıran kısmı

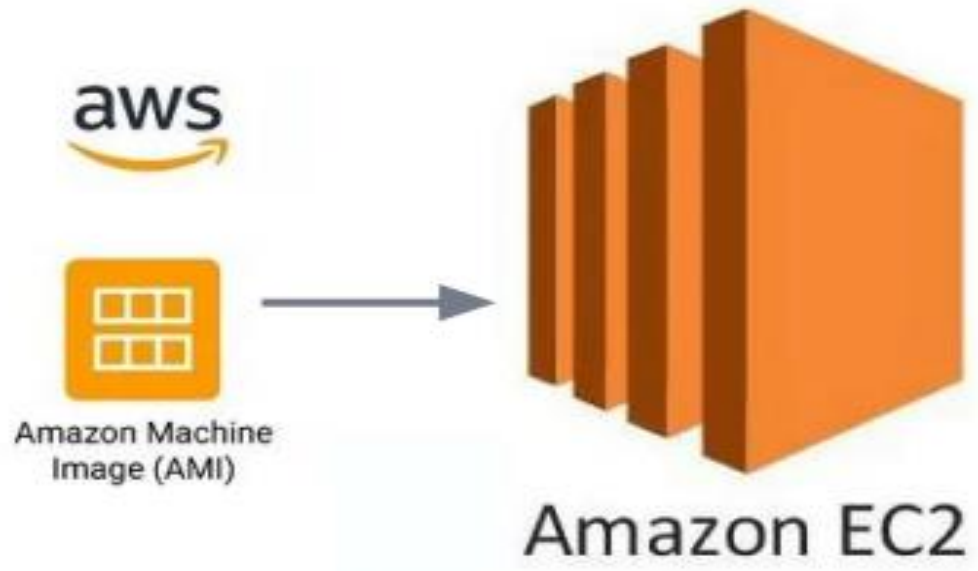
Docker CLI bizim kullandığımız ara yüz.

REST API ise CLI ile daemon arasındaki ilişkiyi kurar.

Images and Containers

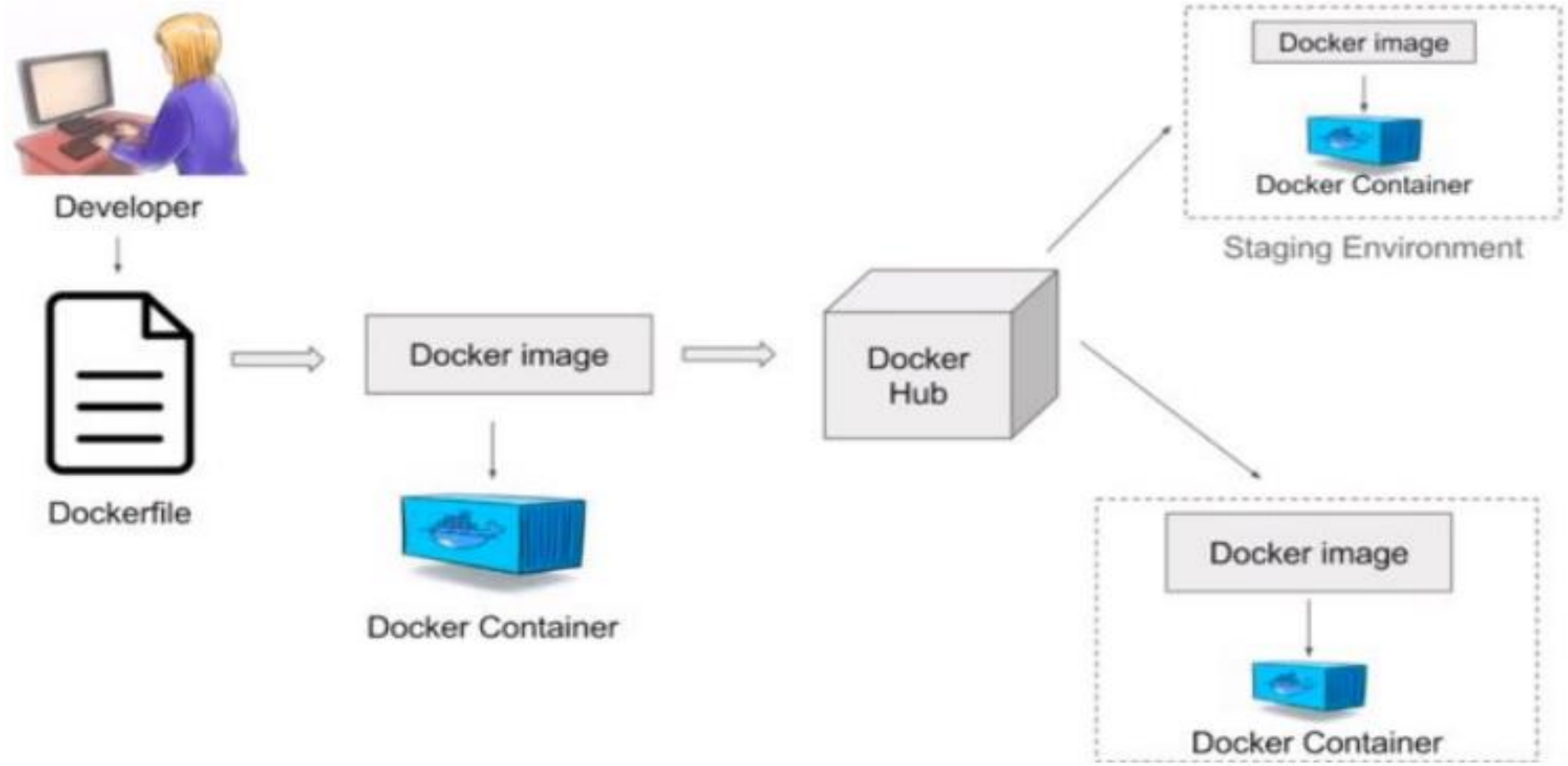
- An image is a read-only template with instructions for creating a Docker container.
- A container is a runnable instance of an image.





https://hub.docker.com

Images and Containers



1.Her docker run yeni container demek.

2. Container bir uygulama içindir ve hep çalışmalıdır.

3. Her container bir process'dir.

4. imagelar olabildiğince küçük olmalıdır.

5. Her ne kadar container içerisine 1 den fazla uygulama yüklenebilse de kullanım için uygun değildir.Her container 1 uygulama için oluşturulmalıdır.