



INSIGHT



# DOCKER

Também pode conter um subtítulo logo abaixo



# AGENDA

1. INTRODUÇÃO
2. DOCKER
3. COMANDOS BÁSICOS

# 1. INTRODUÇÃO

# CONTAINER

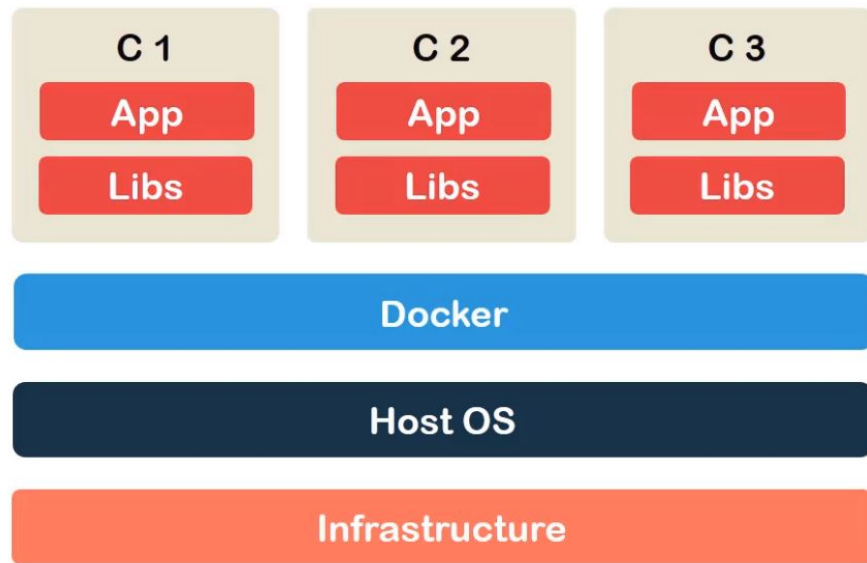
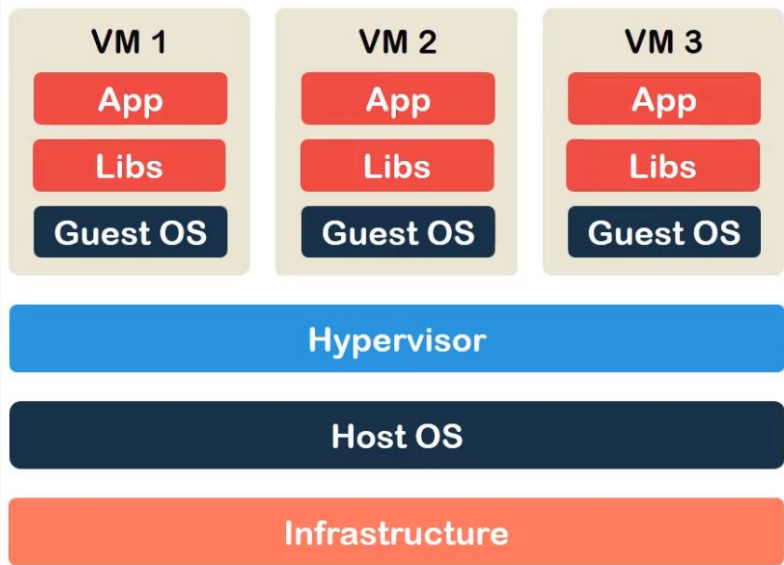
- É uma unidade padrão de software que empacota o código e todas as suas dependências para que uma aplicação seja executada de maneira rápida e confiável em diferentes ambientes de computação.



# VIRTUAL MACHINES vs CONTAINERS

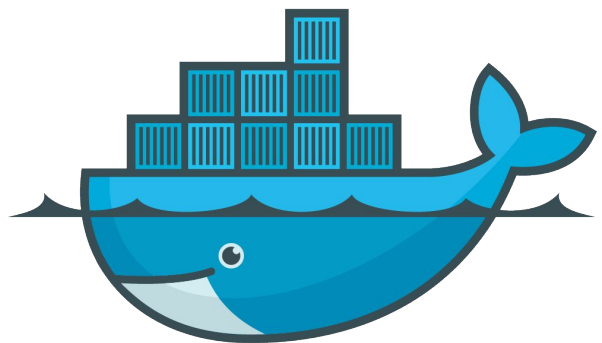
CARACTERÍSTICAS	VIRTUAL MACHINES	CONTAINERS
Camada de software	Hypervisor	Docker
Virtualização	a nível de máquina	a nível de SO
SO hospedeiro	Sim	Não
Exigência de Recursos	Alta	Baixa
Demanda de espaço	Alta	Baixa
Implantação	Custosa	Rápida

# VIRTUAL MACHINES vs CONTAINERS



# INTRODUÇÃO

- É uma plataforma aberta e mais popular para usuários construir, preparar e executar aplicações em *containers*.



docker



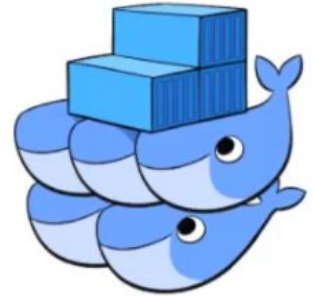
# DOCKER ECOSISTEMA



▷ Docker Engine

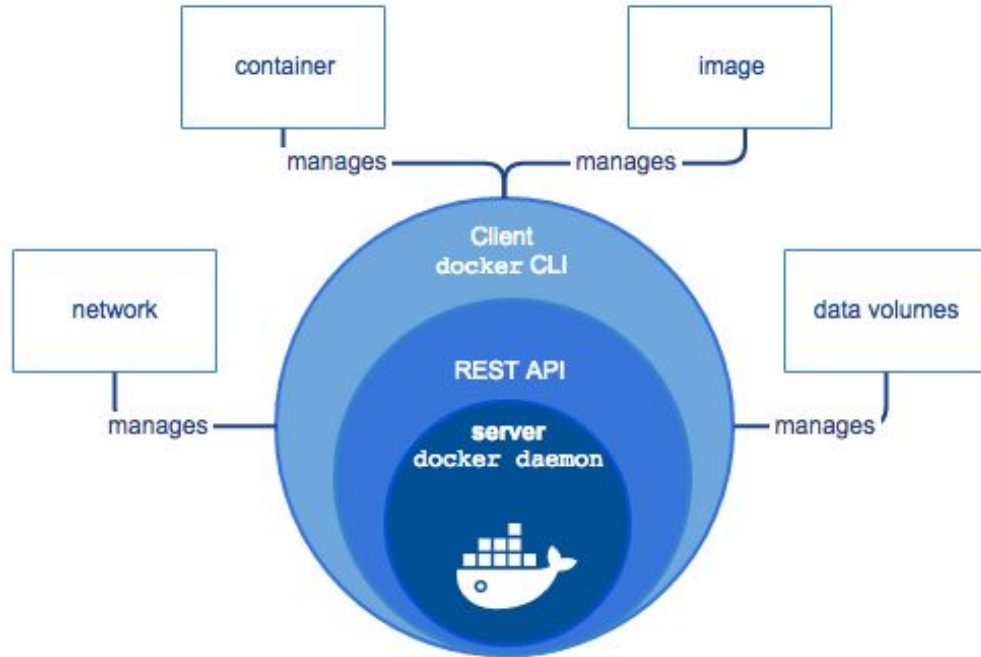


▷ Docker Compose

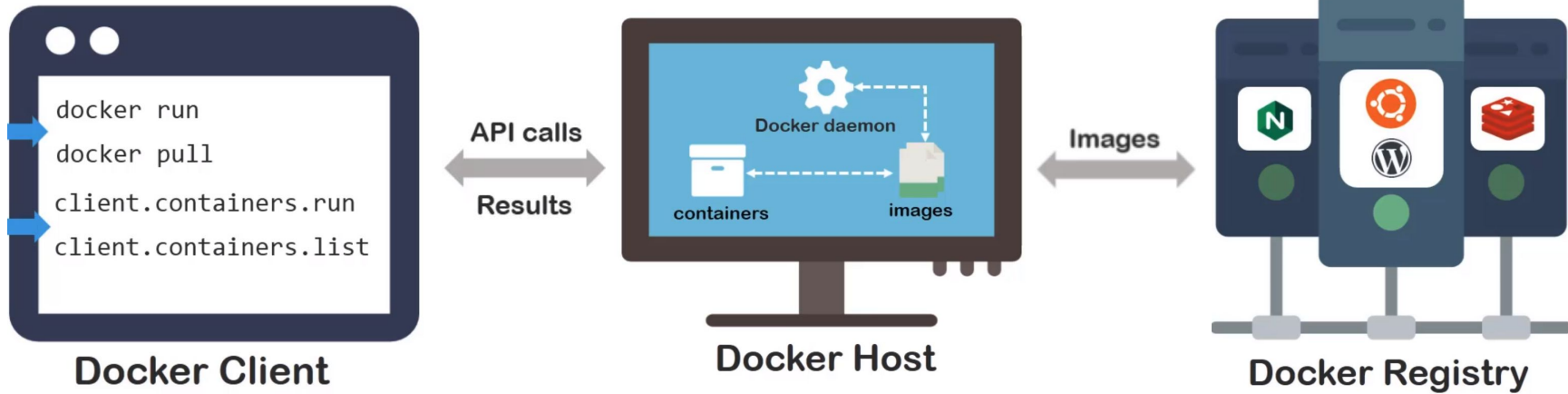


▷ Docker Swarm

# DOCKER ENGINE: ARQUITETURA



# DOCKER ENGINE: COMPONENTES

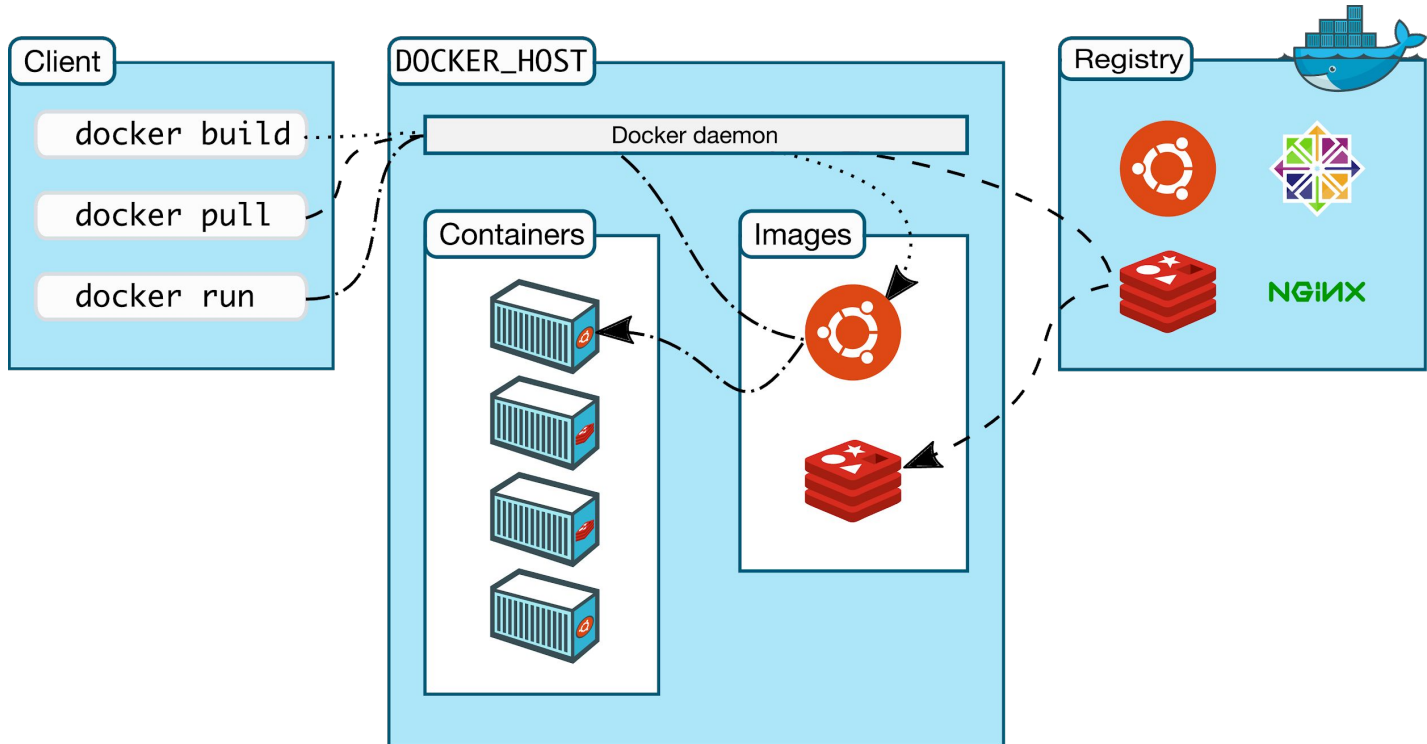


- ▶ Docker CLI
- ▶ Docker API

- ▶ Docker daemon
- ▶ Containers
- ▶ Images

- ▶ Images

# DOCKER ENGINE: FUNCIONAMENTO



# FASES PARA CONTEINERIZAÇÃO



**Dockerfile**  
(Build)

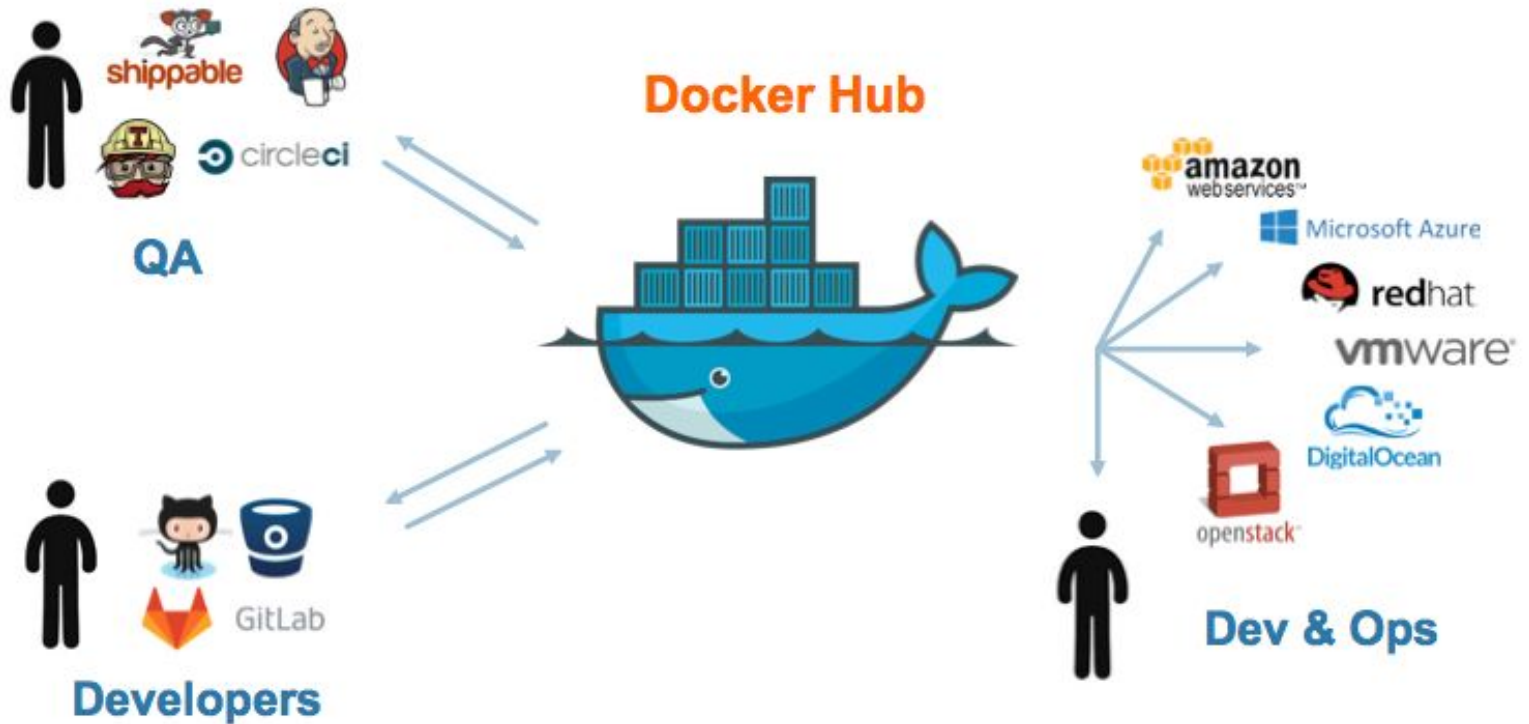


**Docker Image**  
(Ship)



**Containers**  
(Run)

# DOCKER HUBs



## 2. COMANDOS BÁSICOS DO DOCKER

# COMANDOS BÁSICOS

To Docker		
Command	Function	Example
<b>docker version</b>	show the docker version information	docker version
<b>docker info</b>	display system-wide information	docker info



To Images		
Command	Function	Example
<b>docker search</b> <i>[OPTIONS] TERM</i>	Search the docker hub for images	docker search nginx
<b>docker pull</b> <i>[OPTIONS] NAME</i>	Pull an image or a repository from a registry	docker pull nginx
<b>docker images</b> <i>[OPTIONS] [REPOSITORY]</i>	List images	docker images
<b>docker image</b> <i>COMMAND</i>	Manage image	docker image ls
<b>docker rmi</b> <i>[OPTIONS] IMAGE</i>	Remove one or more images	docker rmi nginx:latest
<b>docker load</b> <i>[OPTIONS]</i>	Load an image from a .tar	docker load --input hadoop.tar
<b>docker save</b> <i>[OPTIONS] IMAGE</i>	Save one or more image to a .tar	docker save --output hadoop.tar sequenceiq/hadoop-docker
<b>docker build</b> <i>PATH   URL   -</i>	Build an image from a Dockerfile	docker build .

To Images		
Command	Function	Example
<b>docker tag</b> <i>SOURCE_IMAGE[:TAG]</i> <i>TARGET_IMAGE[:TAG]</i>	create a tag to TARGET_IMAGE that refers to SOURCE_IMAGE	docker tag <none> nginx
<b>docker push</b> <i>[OPTIONS]</i> NAME	Push an image or a repository to a registry	docker push registry-host:5000/myadmin/rhel-httpd
<b>docker history</b> <i>[OPTIONS]</i> IMAGE	Show the history of an image	docker history nginx
<b>docker commit</b> [OPTIONS] CONTAINER	Create a new image from a container's changes	docker commit --change "ENV DEBUG true" c3f279d17e0a svendowideit/testimage:version3

To Containers		
Command	Function	Example
<b>docker create</b> <i>[OPTIONS] IMAGE [COMMAND]</i>	create a new container	docker create -it --name ct-nginx nginx /bin/bash
<b>docker ps</b> <i>[OPTIONS]</i>	list containers	docker ps -a
<b>docker start</b> <i>[OPTIONS] CONTAINER</i>	start a or more stopped containers	docker start ct-nginx
<b>docker stop</b> <i>[OPTIONS] CONTAINER</i>	Stop one or more running containers	docker stop ct-nginx
<b>docker exec</b> <i>[OPTIONS] CONTAINER COMMAND</i>	run a command in a running container	docker exec -it ct-nginx /bin/bash
<b>docker restart</b> <i>[OPTIONS] CONTAINER</i>	restart one or more containers	docker restart ct-nginx
<b>docker container prune</b> <i>[OPTIONS]</i>	Remove all stopped containers	docker container prune
<b>docker kill</b> <i>[OPTIONS] CONTAINER</i>	kill one or more running containers	docker kill \$(docker ps -q)

## To Containers

Command	Function	Example
<b>docker pause</b> [CONTAINER]	pause all processes within one or more containers	docker pause ct-nginx
<b>docker unpause</b> [CONTAINER]	unpause all processes within one or more container	docker unpause ct-nginx
<b>docker rm</b> [OPTIONS] CONTAINER	Remove one or more container	docker rm ct-nginx
<b>docker run</b> [OPTIONS] IMAGE [COMMAND]	Run a command in a new container. Create container, start it and execute command.	docker run -itd --name ct-nginx -p 8080:80 nginx
<b>docker stats</b> [OPTIONS] [CONTAINER]	display a live stream of container resource usage statistics	docker stats
<b>docker top</b>	display the running process of a container	docker top ct-nginx
<b>docker rename</b> [CONTAINER] NEW_NAME	rename a container	docker rename ct-nginx nginx-ct

To Containers		
Command	Function	Example
<b>docker attach</b> [OPTIONS] CONTAINER	Attach local standard input, output, and error streams to a running container	docker attach ct-nginx
<b>docker cp</b> [OPTIONS] CONTAINER:SRC_PATH DEST_PATH -	Copy files/folders between container and local filesystem	docker cp -a /home/nicksson/Github/Dockerfile ct-hadoop:/dockerfiles
<b>docker cp</b> [OPTIONS] SRC_PATH - CONTAINER:DEST_PATH	Copy files/folders between container and local filesystem	docker cp -a data ct-hadoop:/data

# REFERÊNCIAS PRINCIPAIS

- WHITE, Tom. **Hadoop: The definitive guide.** " O'Reilly Media, Inc.", 2012.
- RADTKA, Zachary; MINER, Donald. **Hadoop with Python.** O'Reilly Media, 2015.
- CHU, Cheng-Tao et al. Map-reduce for machine learning on multicore. In: **Advances in neural information processing systems.** 2007. p. 281-288.
- DEAN, Jeffrey; GHEMAWAT, Sanjay. MapReduce: a flexible data processing tool. **Communications of the ACM**, v. 53, n. 1, p. 72-77, 2010.

# REFERÊNCIAS COMPLEMENTARES

- **Curso Edureka.** Hadoop Tutorial: All you need to know about Hadoop! Acesso em <<https://www.edureka.co/blog/hadoop-tutorial>>;
- **Curso Guru.** Big Data Hadoop Tutorial for Beginners: Learn in 7 Days!. acesso em <<https://www.guru99.com/bigdata-tutorials.html>>;
- **Curso Cetax.** Apache Hadoop Essentials. acesso disponível em <<https://www.cetax.com.br/curso-de-apache-hadoop-essentials/>>



# OBRIGADO!

## Dúvidas?

Você pode me encontrar em

- ▶ [nickssonarrais@gmail.com](mailto:nickssonarrais@gmail.com)
- ▶ (84) 9 9990-4373