

1. Docker → Docker is a software platform for building applications based on containers — small & lightweight execution environments that make shared use of the operating system kernel but otherwise run in isolation from one another.

In simple words, docker is an open-source software platform for building and running applications based on containers by using virtual machine.

2. Containers → A container is a standard unit of software that packages up code and all its dependencies so the application runs quickly and reliably from one computing environment to another.

A docker container image is a lightweight, standalone, executable package of software that includes everything needed to run an application : code, runtime, system tools, system libraries and settings.

3. Difference between VM and Containers.

VM runs on top of an emulating software called hypervisor which sit b/w the hardware and the VM. The hypervisor is the key to enable

Virtualization.

Container sits on the top of a physical server and its host operating system.

Virtual Machine (VM)

i) It is a piece of software that allows to install other software ~~in~~ inside of it to control it virtually instead of installing software directly.

ii) Applications running on VM system can run different os.

iii) VM virtualizes the computer system.

iv) It's size is very large.

v) It uses a lot of system memory.

vi) It's more secure.

vii) It takes minutes to run due to large size.



viii) G - KVM, Xen, VMware

Containers

i) Container is a software that allows different functionalities of an application independently.

ii) Applications running in a container environment share a single os.

iii) Container virtualizes the os only.

iv) It's size is very light i.e., few megabytes.

v) Containers requires very less memory.

vi) They are less secure.

vii) It takes few seconds to run.

viii) G - Rancheros, Container, PhotonOS by Docker.



4. Difference between 'rm' and 'rmi' in docker

Docker rm command removes one or more containers not images.

And docker rmi command removes one or more images

Code:-
\$ docker rmi -f image1 image2
\$ docker rm -f <container-name>

5. Pull (<https://hub.docker.com/>) image and run some commands inside the shell.

- i) \$ docker (for help)
- ii) \$ docker run -it --rm -v /path/to/script.sh: /script.sh:ro
- iii) \$ docker run -it --rm bash (running bash)
- iv) # echo \$BASH_VERSION (In bash)
- v) exit (to exit bash)
- vi) \$ docker run -it --rm -v /path/to/script.sh: /script.sh:ro bash:5.1 bash /script.sh (Created directory)
- vii) \$ docker images (to check created images)
- viii) \$ docker rmi bash (to delete image)

