Exploring Docker:

A guide for Absolute Beginners

WOMEN WHO CODE KYIV

OCTOBER 13, 2021

19:00| ONLINE

Agenda

19:00 – 19:15	Welcome & Introductions
19:15 –20:00	“Exploring Docker: A guide for Absolute Beginners ”, Tetiana Boichenko
20:00 - 20:30	Q&A and Networking

WWCode story

Our mission is to inspire women to excel in technology careers.

We envision a world where women are proportionally represented as **technical leaders**, **executives**, **founders**, **VCs**, **board members**, and **software engineers**.

https://www.womenwhocode.com/about

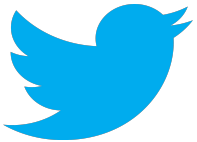
WWCode Kyiv activities

- Join our events
- Speak at our events
- Find a mentor or be a mentor
- Get discounts or free tickets
- Find job opportunities or share them
- Communicate
- Become a volunteer

Volunteering with Women Who Code Kyiv

Get Social with #WWCodekyiv

@wwcodekyiv



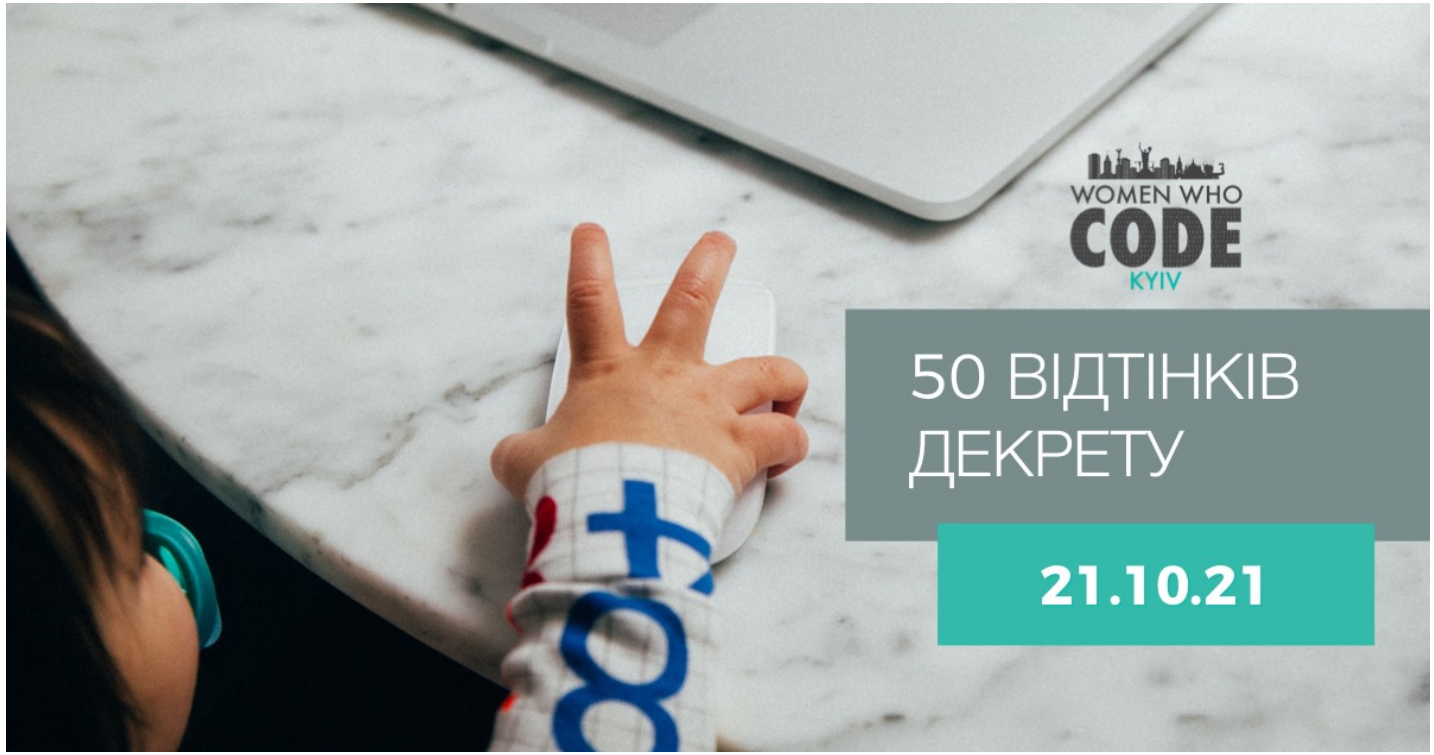
WOMEN WHO CODE KYIV

Code of conduct

- ➔ Please, be respectful and nice to other people in WWCode community.
- ➔ We value your safety and security and strive to have an inclusive community.
- ➔ Therefore, we do not tolerate harassment of members or event participants in any form.
- ➔ If you would like to report an incident, please, contact our leadership team.

https://goo.gl/vRnQRJ

Our next event



TETIANA BOICHENKO

SOFTWARE DEVELOPER

C/C++

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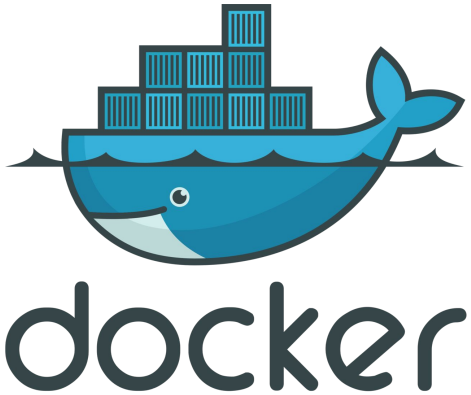
@tanechkanika

https://www.linkedin.com/in/tetianaboichenko/

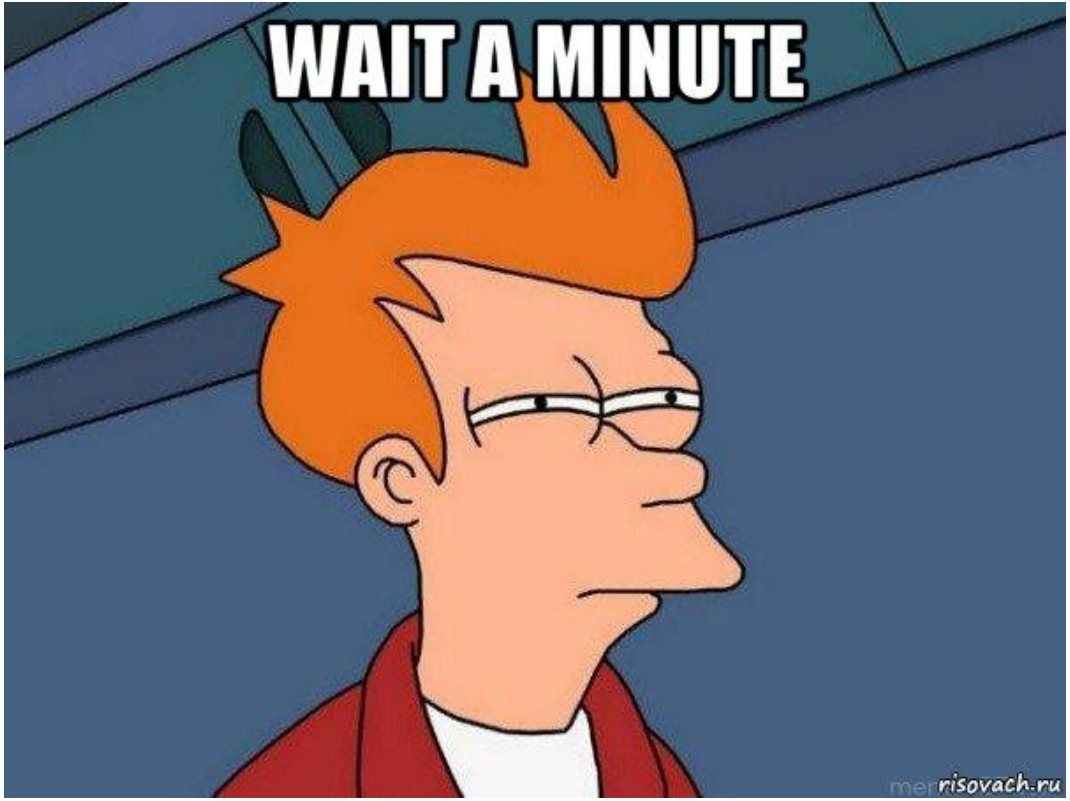
Let's go !

IT WORKS ON MY MACHINE
THEN WE'LL SHIP YOUR MACHINE
AND THAT IS HOW DOCKER WAS BORN
Imgflip.com

Who use Docker?

What is  ?

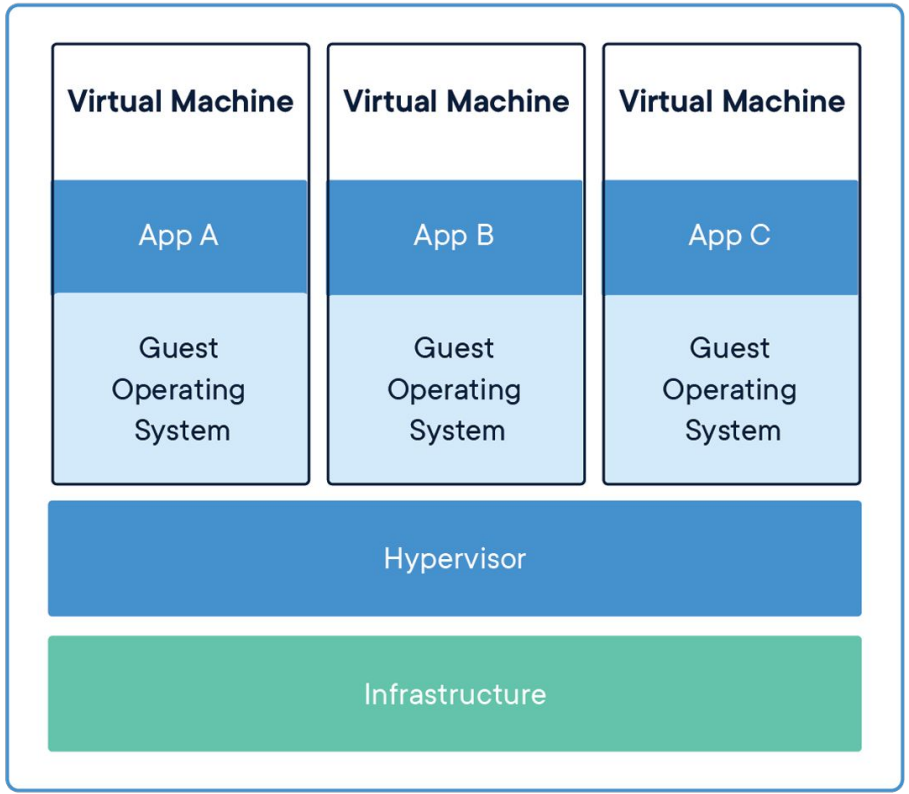
Let’s forget about Docker for a second



but I can use VM for it

What is virtual machine?

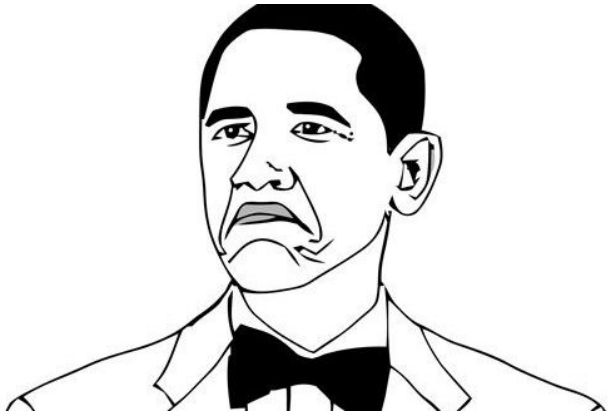
What is virtual machine?



Docker vs VM

Virtual Machine - isolated system

Do not depend on current system environment
Universal
Security



Docker vs VM

Virtual Machine - isolated system

Do not depend on current system environment
Universal
Security

If something goes wrong ...

THIS IS FINE.

Docker vs VM

If something goes wrong.. BOOM :)

Manual work (OS installation, environment set up)

Slow (full OS emulation)

Download

Install

Troubleshoot Issues

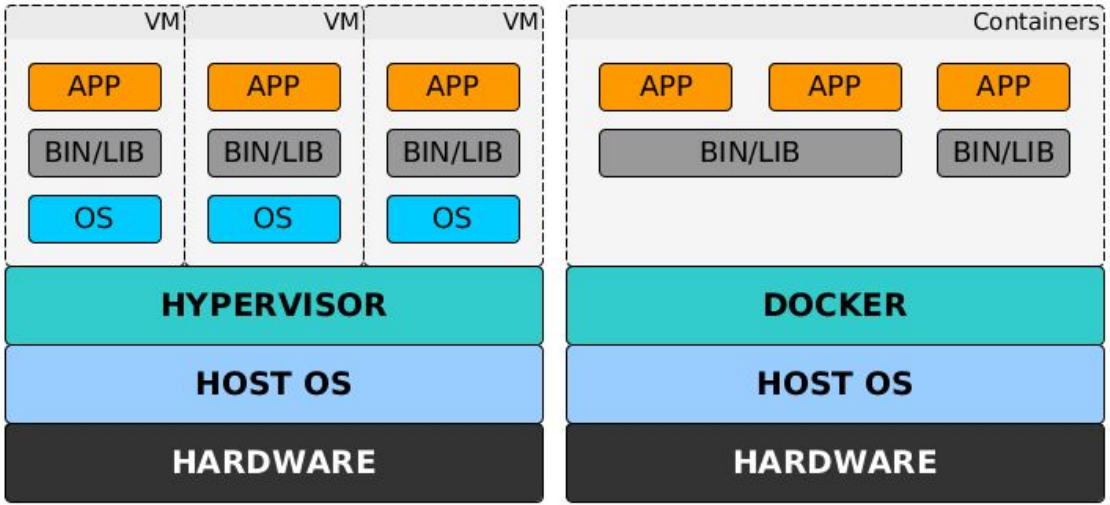
Use Docker!

Docker Advantages

Fast - no OS installation, using parts of current system

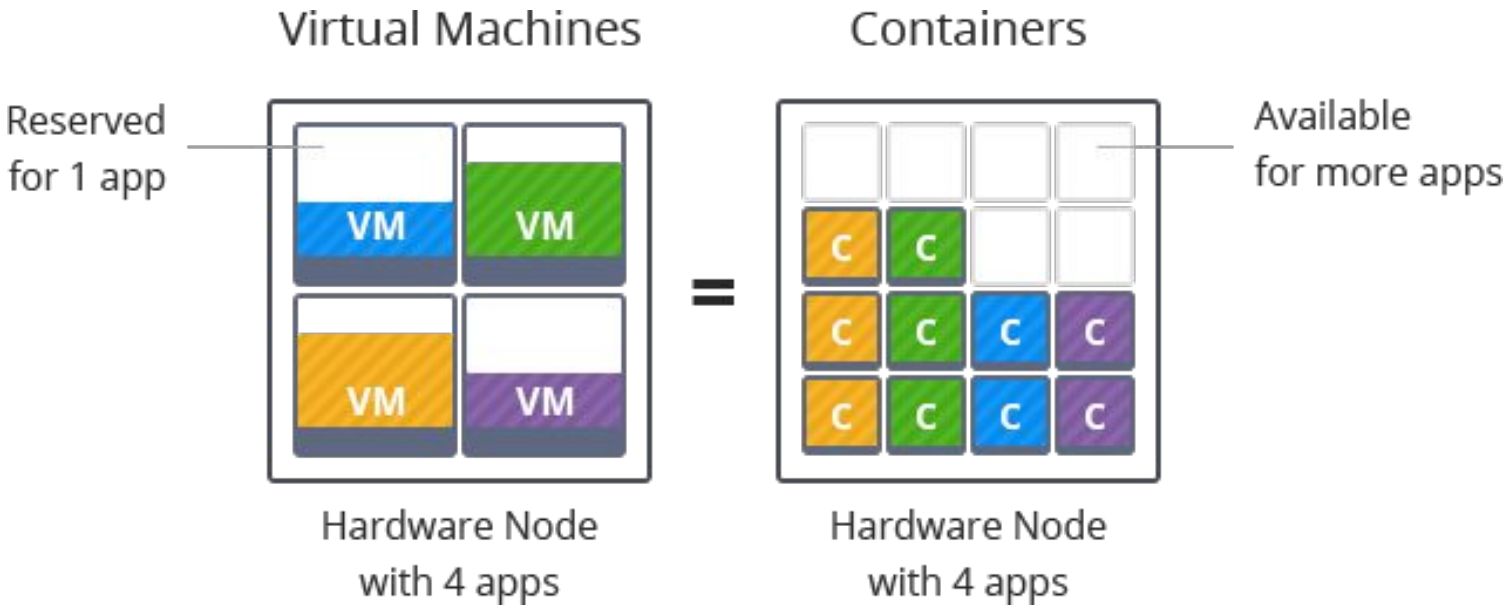
Resources usage efficiency

Running multiple instances at the same time with no penalty, reusing unchanged data



Docker Advantages

No resources reservation



Docker Advantages

Easy to set up - script base images

Automated tests, which may be used for Build Server

Easy to bind together - run and test services communication (integration tests)

Easy compatibility tests (e.g. new Frontend with old Backend)

Easy to deploy and migrate - additional abstract layer.

You are sure it will be the same on Production as you tested.

Why do we need it ?

- Easy test piece of software
- Easy run different software versions at the same time
- Easy compatibility testing (e.g. new frontend + old backend)
- Easy to create automation tests
- Easy deploy piece of software
- Fast
- Free

TASK: Test software without installation

Virtual Machine - isolated system

Install OS
Install needed environment
Copy binary files in proper place
Copy configuration
Run if you can
If something changed - repeat with manual copy with possible human error

Docker - full environment isolation

Write small script, more like configuration, which does all we need
Copy binary files in proper place
Copy configuration
Install needed environment
Build image and run if you can
If something changed - build image and run if you can. It's automated already

Docker Limitations

No interaction

Test native UI ? - Go back to VM

Ideal - web services (backend + frontend), server services

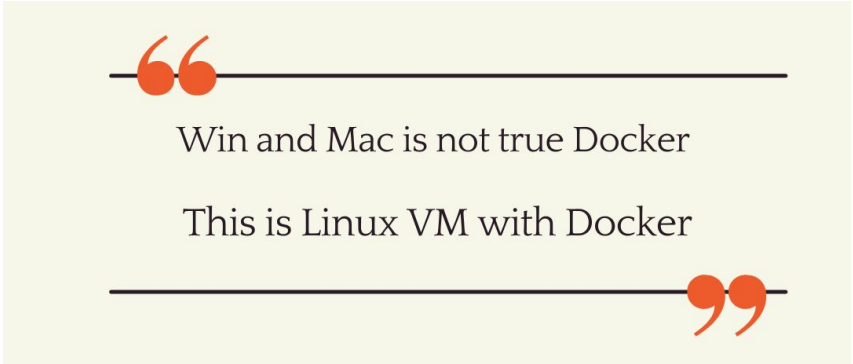
Docker Limitations

System type dependency

Native: Lin on Lin (docker is Linux product after all)

over VM: Win on Win, MacOS on MacOS, Lin on Win, Win on Lin

Ideal - same system containers



Installation: Community Edition VS Enterprise Edition

Capabilities	Community Edition	Enterprise Edition Basic	Enterprise Edition Standard	Enterprise Edition Advanced
Container engine and built in orchestration, networking, security	✓	✓	✓	✓
Certified infrastructure, plugins and ISV containers		✓	✓	✓
Image management			✓	✓
Container app management			✓	✓
Image security scanning				✓

- ➔ Based on the same open source code - no difference in base functionality
- ➔ Support
- ➔ Images and plugins certifications
- ➔ Vulnerability scan

Linux Installation

No problem, just install it

Ordinary user should be added to the docker group

Note: watch the space, /var/lib/docker

Windows Installation

Docker for windows needs HyperV, which means All other Hypervisors will be disabled

Dual Boot (with HyperV or without)

Ordinary user should be added to docker-users group and restart

Note: switch to proper containers type Linux or Windows

Note: watch the space, change target directory

I set up the docker... and then what we do

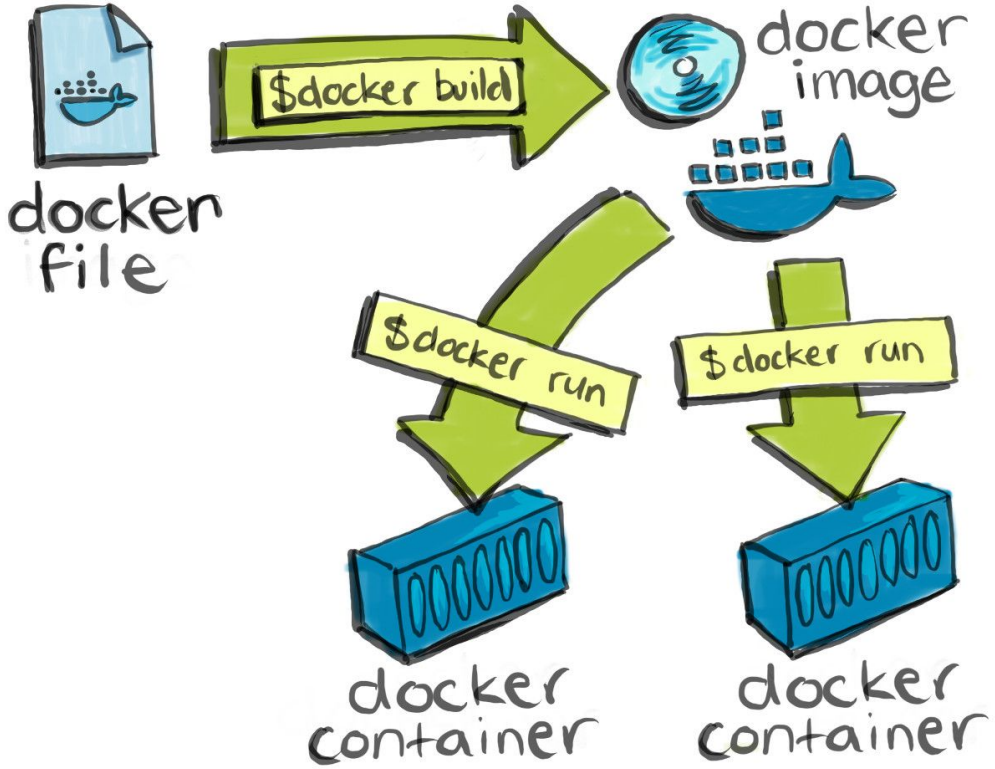
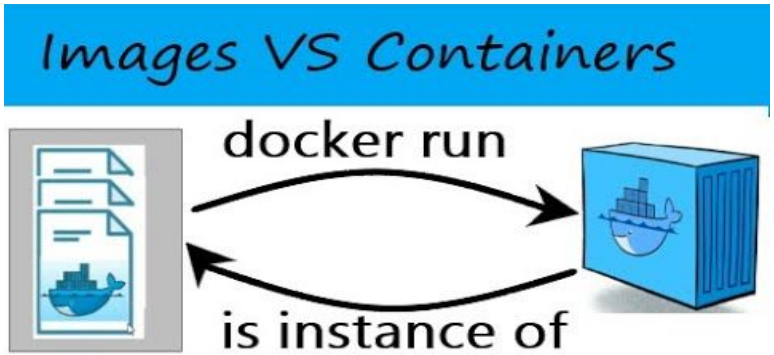


Image © Copyright Cultivate Software Ltd
https://cultivatehq.com/posts/docker/

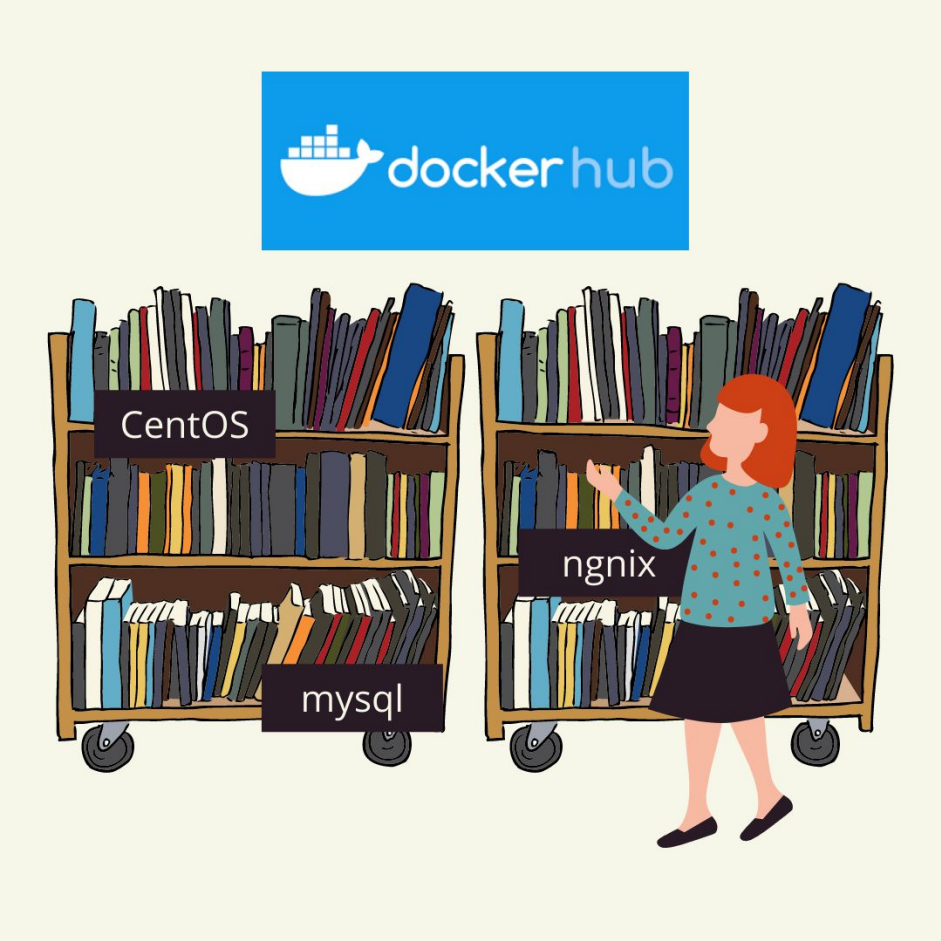
Images vs Containers

- ➔ Image is buildable and static
- ➔ Container is runnable.
- ➔ We can run any number of containers out of the same image



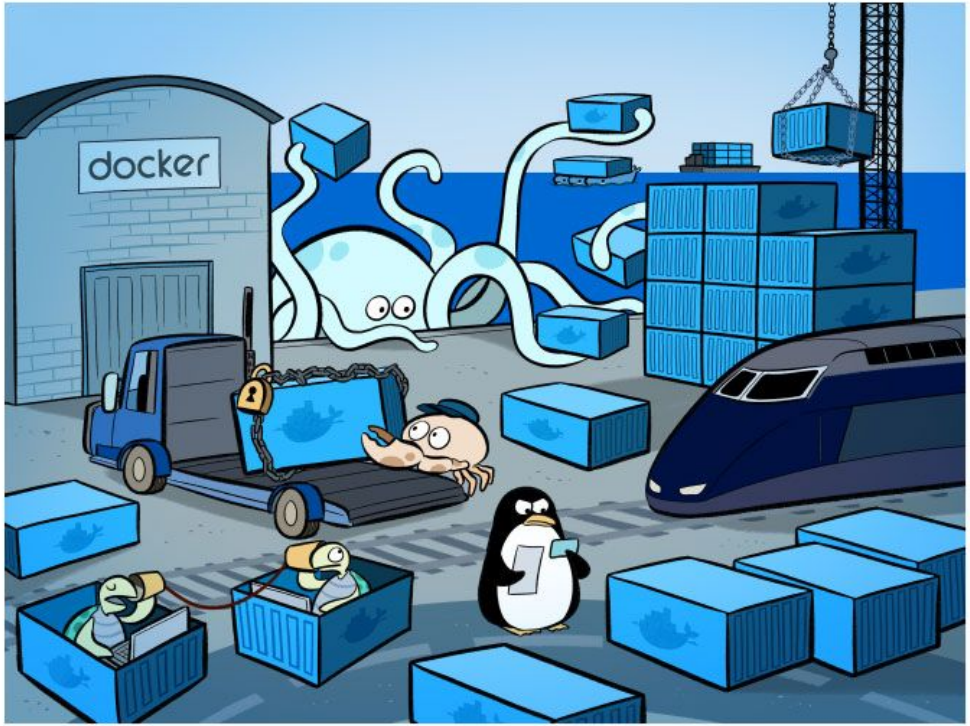
Where to find Docker images?

- ➔ Central images repository
- ➔ There are already base images available there
- ➔ You can register your own images for the public

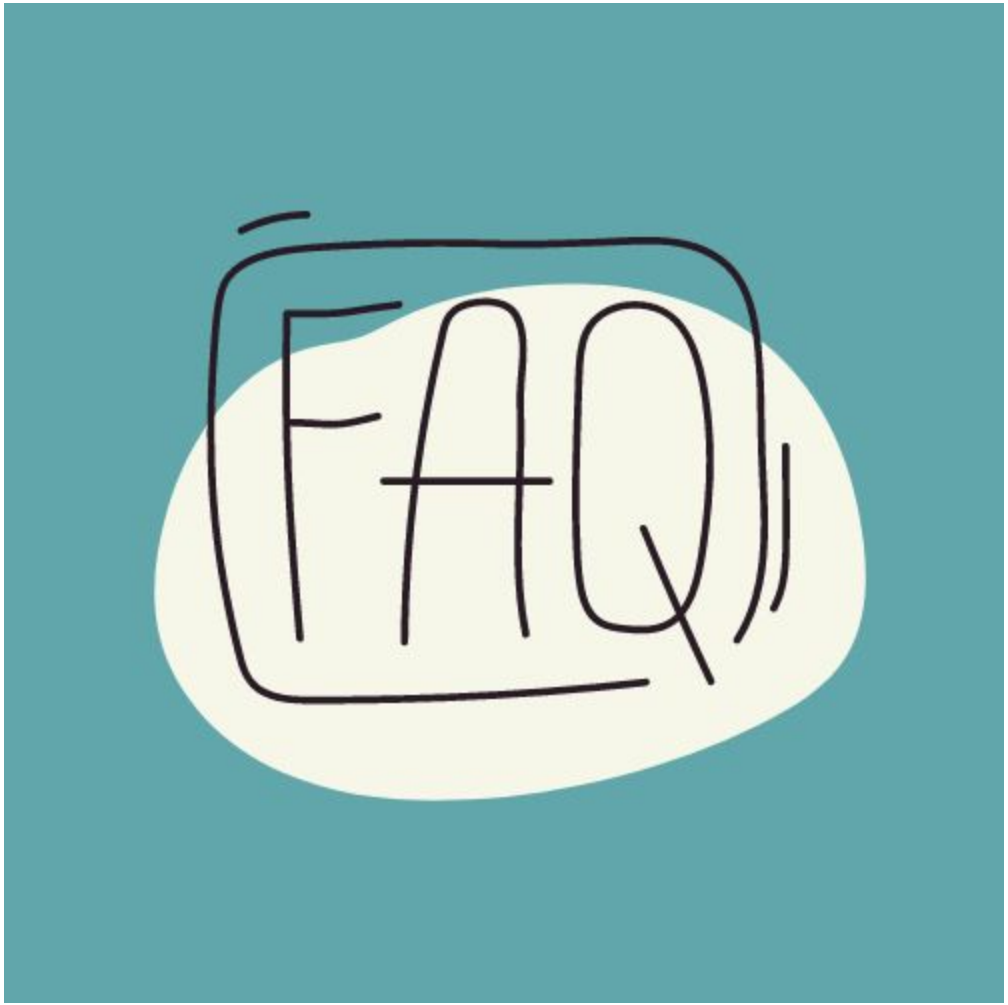


Docker CLI

- docker run
- docker images
- docker ps
- docker start | stop | restart
- docker build
- docker rm
- docker rmi
- docker inspect

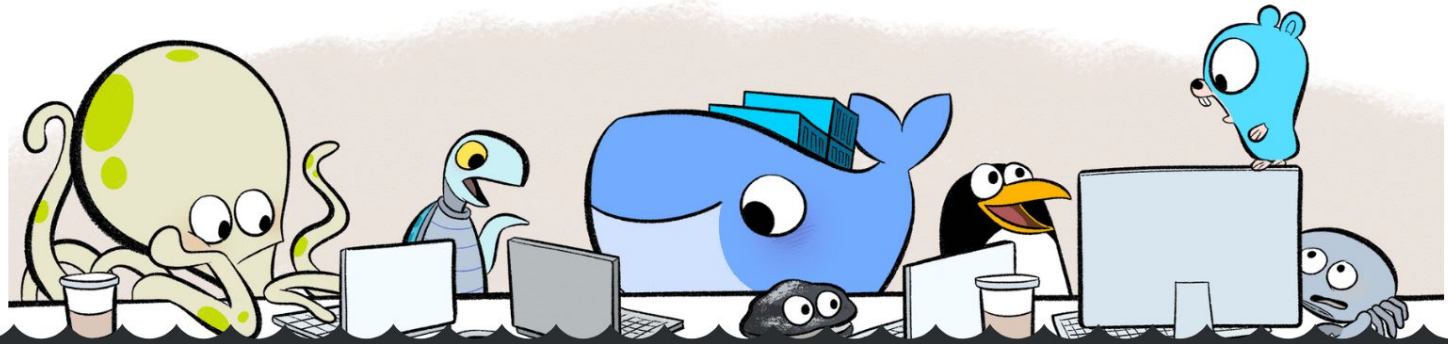


Demo Time

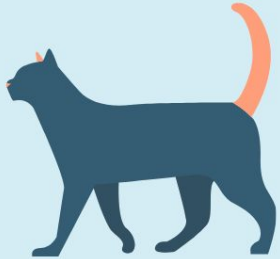

FAQ

Exploring Docker: workshop

COMING SOON



NOVEMBER | ONLINE



YOU'RE THE PURR-FECT !!!