PUNE DEVELOPER'S COMMUNITY

Docker Meetup Series : First Meetup

Docker 101: Getting Started

By Akshay Ithape - DevOps Engineer

Session Agenda

Section 1 (Theory) :

- Why do we need Containers ?
- Difference between VMs & Containers
- Introduction to Docker
- Docker Architecture
- Docker Terminologies

Section 2 (Hands-On) :

- Hands-on lab 1 : Run First Container

Break : 15 Mins

Section 3 (Hands-On) :

- Hands-on lab 2 : Run Container for Java Application

Section 4 :

- Challenge : Run Container for HTML Application
- Q&A Session
- Closing Note

$whoami

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The complete portal on open source

I truly believes in Open Source so I like to share my knowledge with community in as many ways possible and helping people.

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Why do we need Containers ?


SAY ONE MORE TIME
WORKS ON MY MACHINE
memegenerator.net

Why do we need Containers ?

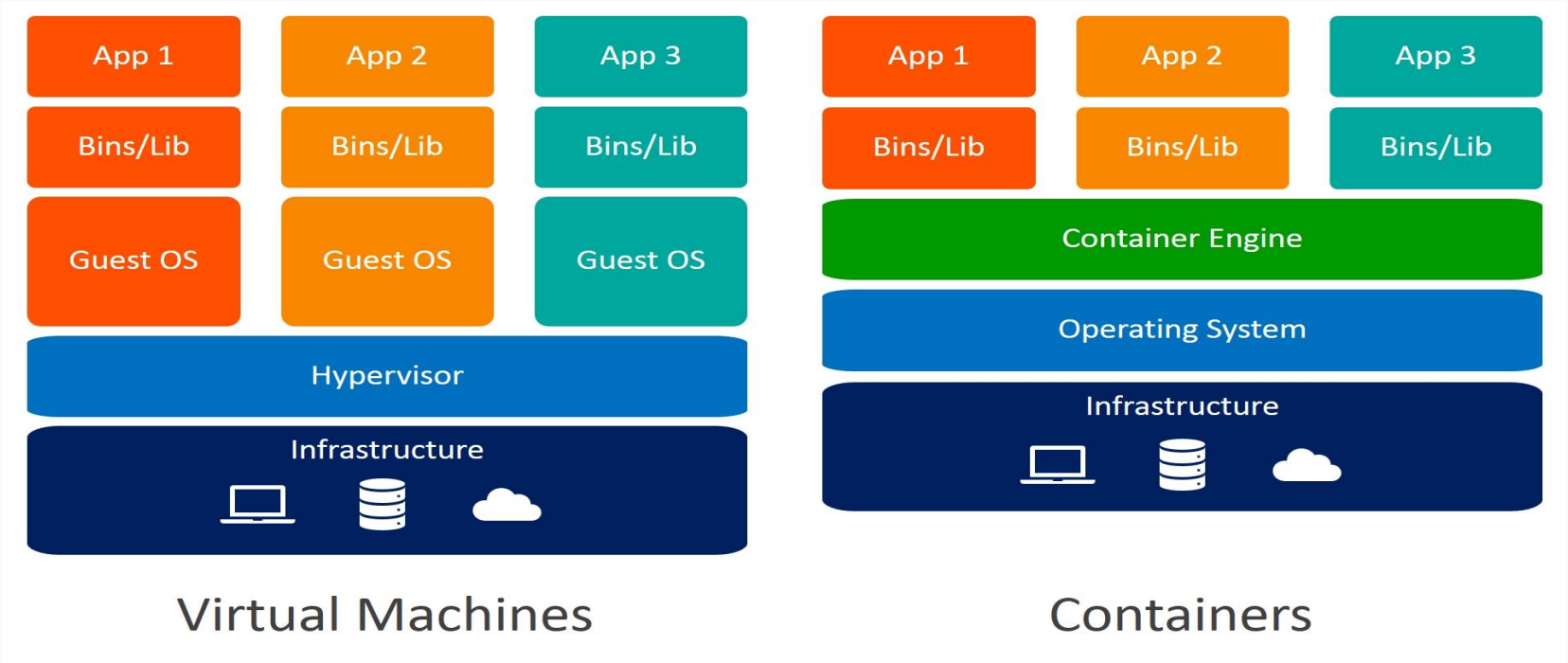
- Resolve Dependencies issues
- Resolve Compatibility issues
- Build Once and Run Anywhere
- Reduce Deployment Timing
- Easy for Automation
- Runs in Isolated environment

Difference between VMs & Containers

Virtual Machines

Containers

Difference between VMs & Containers



Difference between VMs & Containers

Virtual Machines

- Heavyweight
- Each VM run on its own OS
- Hardware Virtualization
- Start up time is more
- More secure due to full isolation

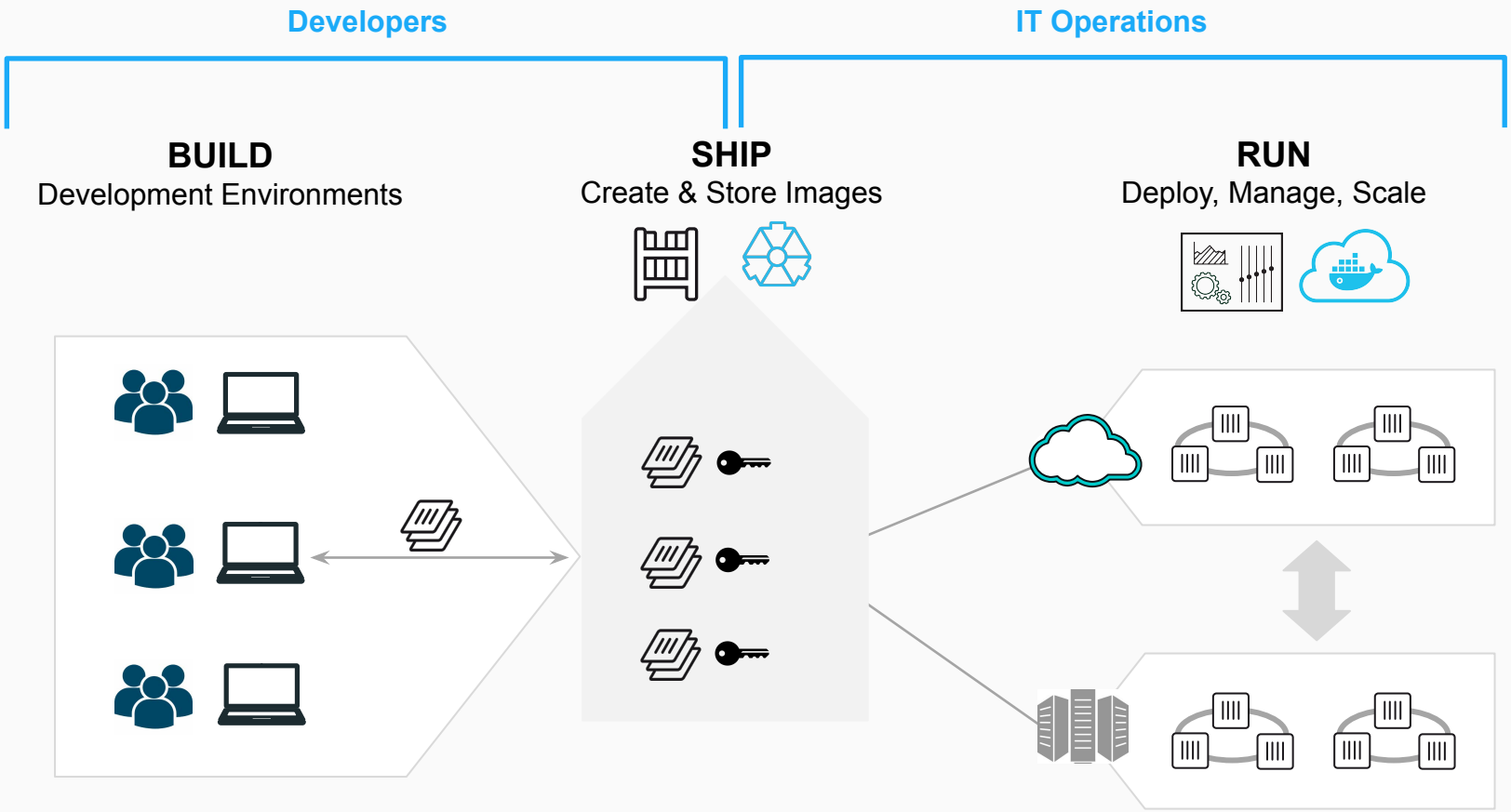
Containers

- Lightweight
- Container shares the host OS
- OS Virtualization
- Start up time is less
- Less secure due to process level isolation

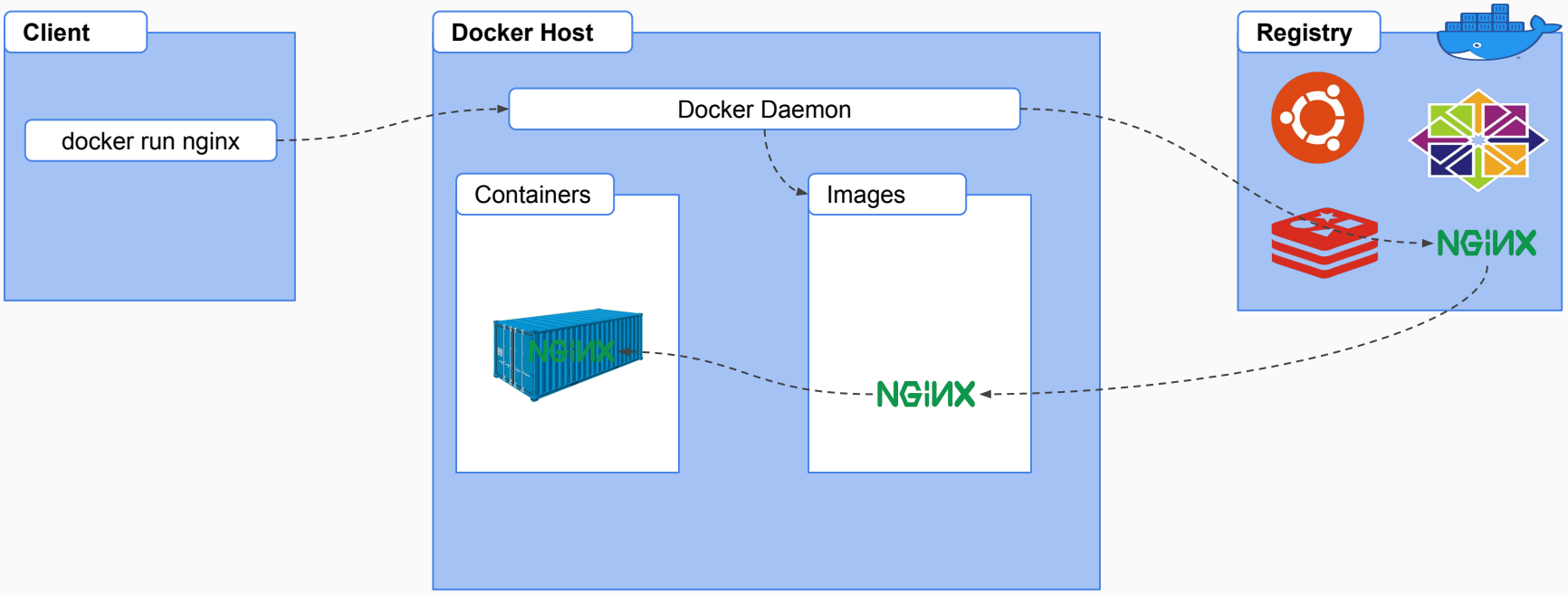
Introduction to Docker

- Docker is the leader in the containerization market.
- Docker is an open platform for developing, shipping, and running applications.
- Docker uses Client-Server Architecture.
- Docker Client communicate with Docker Daemon via REST API which does main task of building, creating & running containers.
- Docker/Containers uses features of the Linux kernel such as pivot_root, cgroups, namespaces, capabilities, seccomp-bpf & overlay file systems.

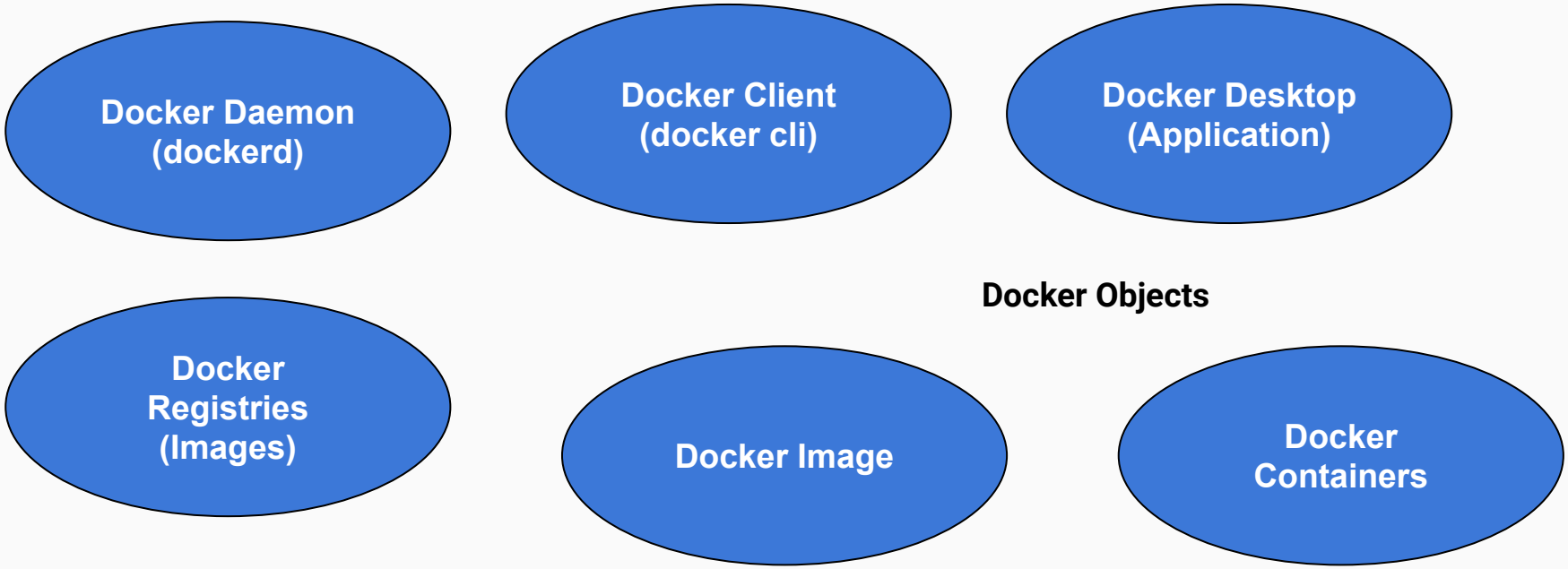
Docker : Build, Ship, Run Workflow



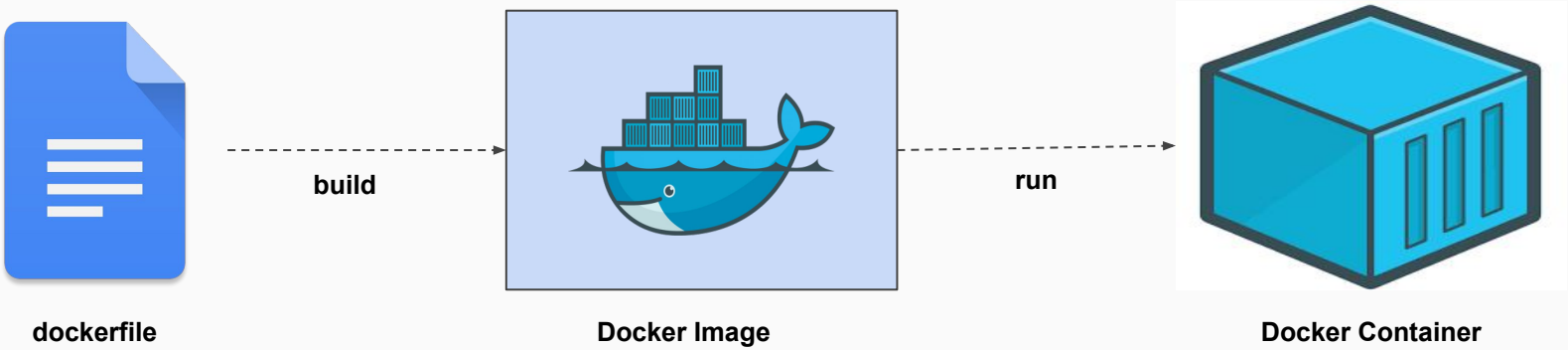
Docker Architecture



Docker Terminologies



How To Build Docker Image ?



Hands-On Labs

Github Repository

https://github.com/akshayithape-devops/Mastering-Docker

Lab #1 : Run first container

- Get docker information
- Run a first container
- Run multiple containers
- Remove the containers

Lab #2 : Run Container For Java Application

- Build & Run Java application without using Docker
- Build & Run Java application using Docker
- Make changes Persistent
- Push changes to Docker Hub
- Rerun the container with new image(Persistent Changes)
- Remove everything

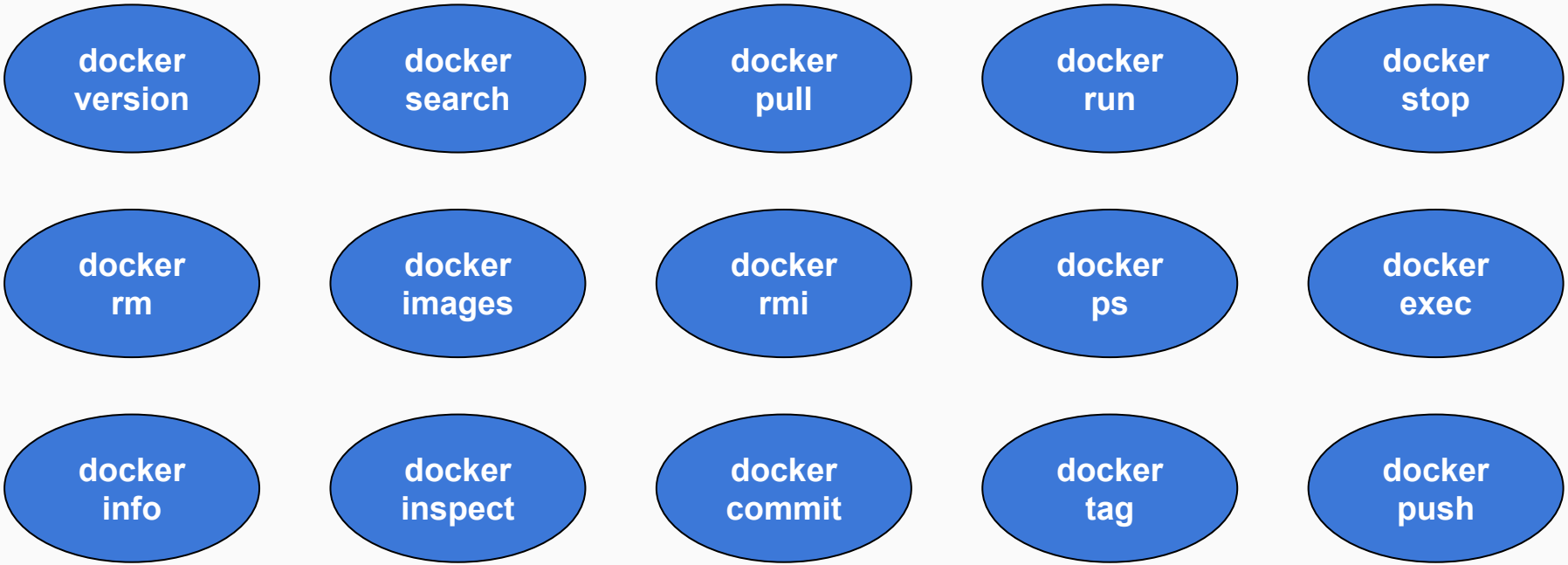
Challenge

Lab #3 (Challenge)

- Build docker image with following HTML contents.

- Publish that image on your Docker Hub Account.
- Share that image name with me.
- When I will run container with that image.
  It should print same output as above.

Essential Docker Command



QUIZ

Q&A Session

Reference Link

- https://www.statista.com/statistics/1256245/containerization-technologies-software-market-share/
- https://docs.docker.com/get-started/overview
- https://www.techtarget.com/searchitoperations/feature/Dive-into-the-decades-long-history-of-container-technology

Thank You EveryOne

Be In Touch

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