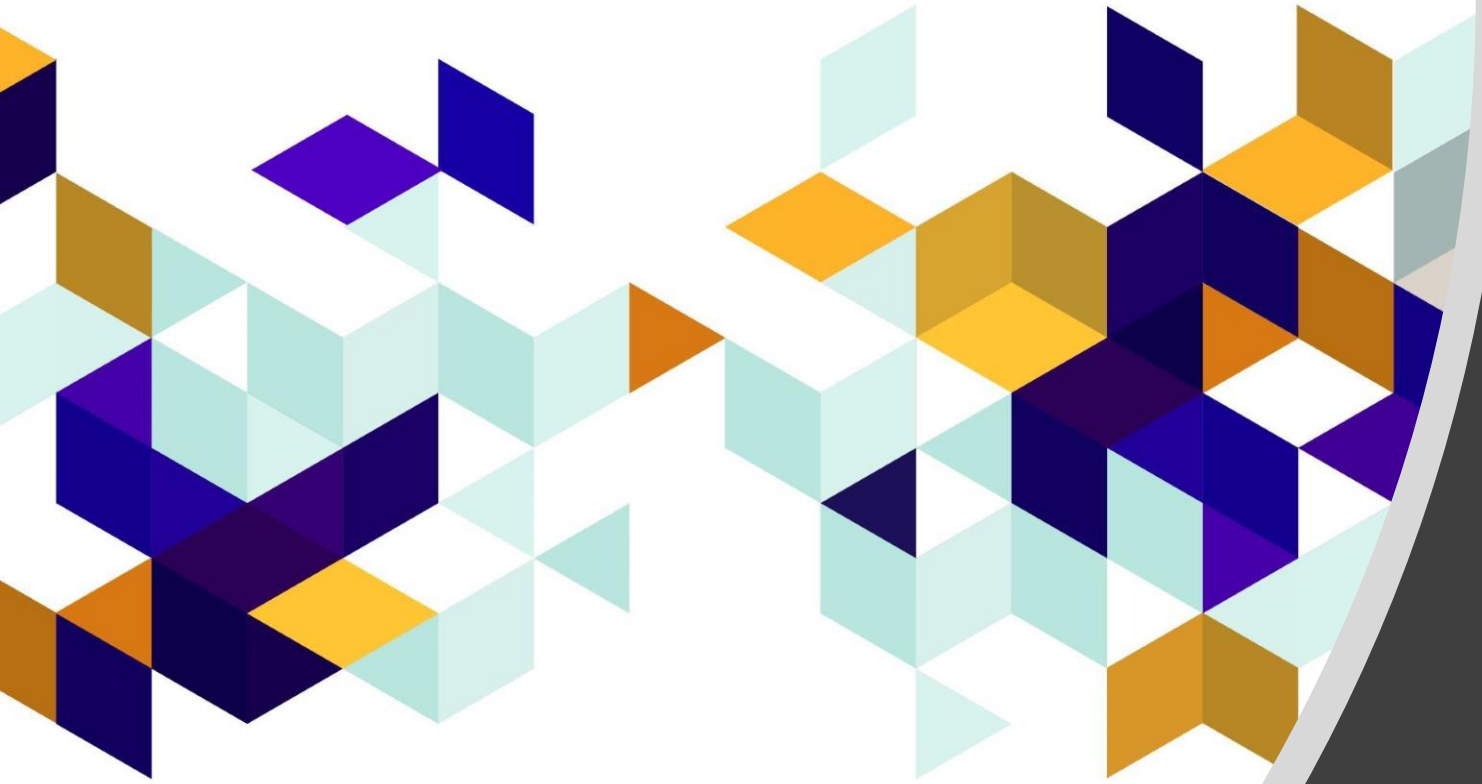
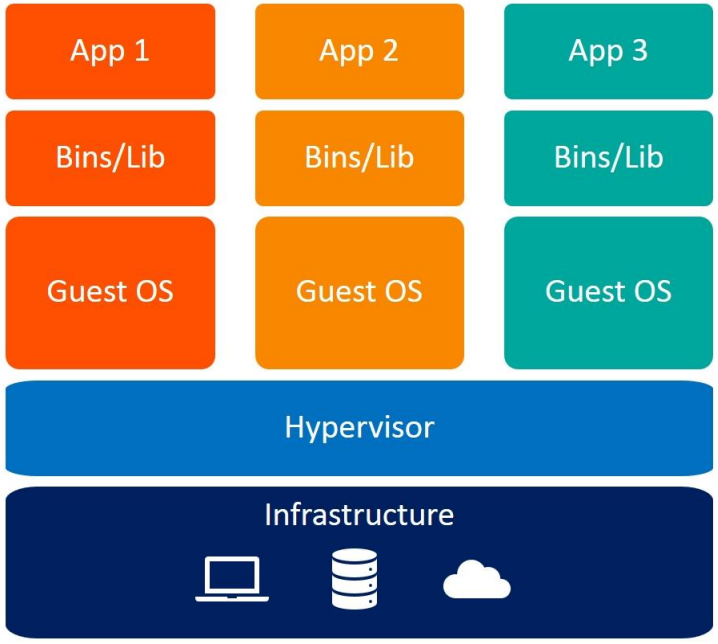


Docker and Kubernetes Training QRF

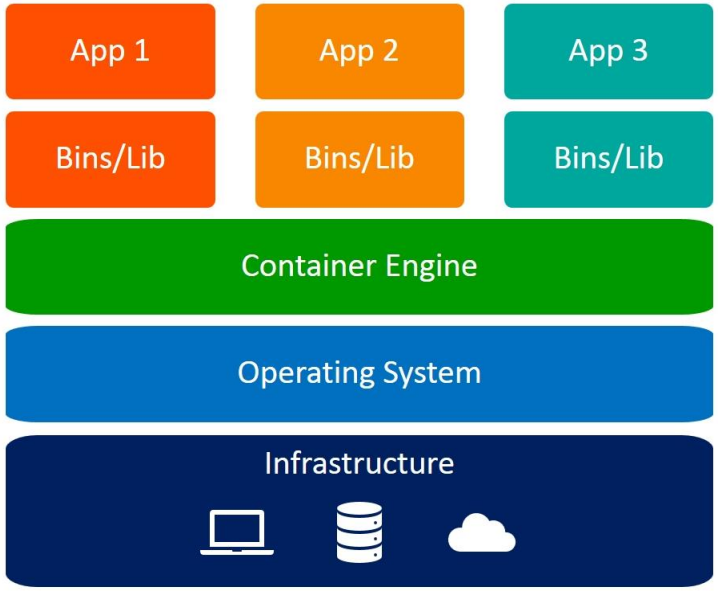
By Dr. Chen and Luis Monroig

FRI Jan 27, 2023 from 10am-12pm

What are containers?



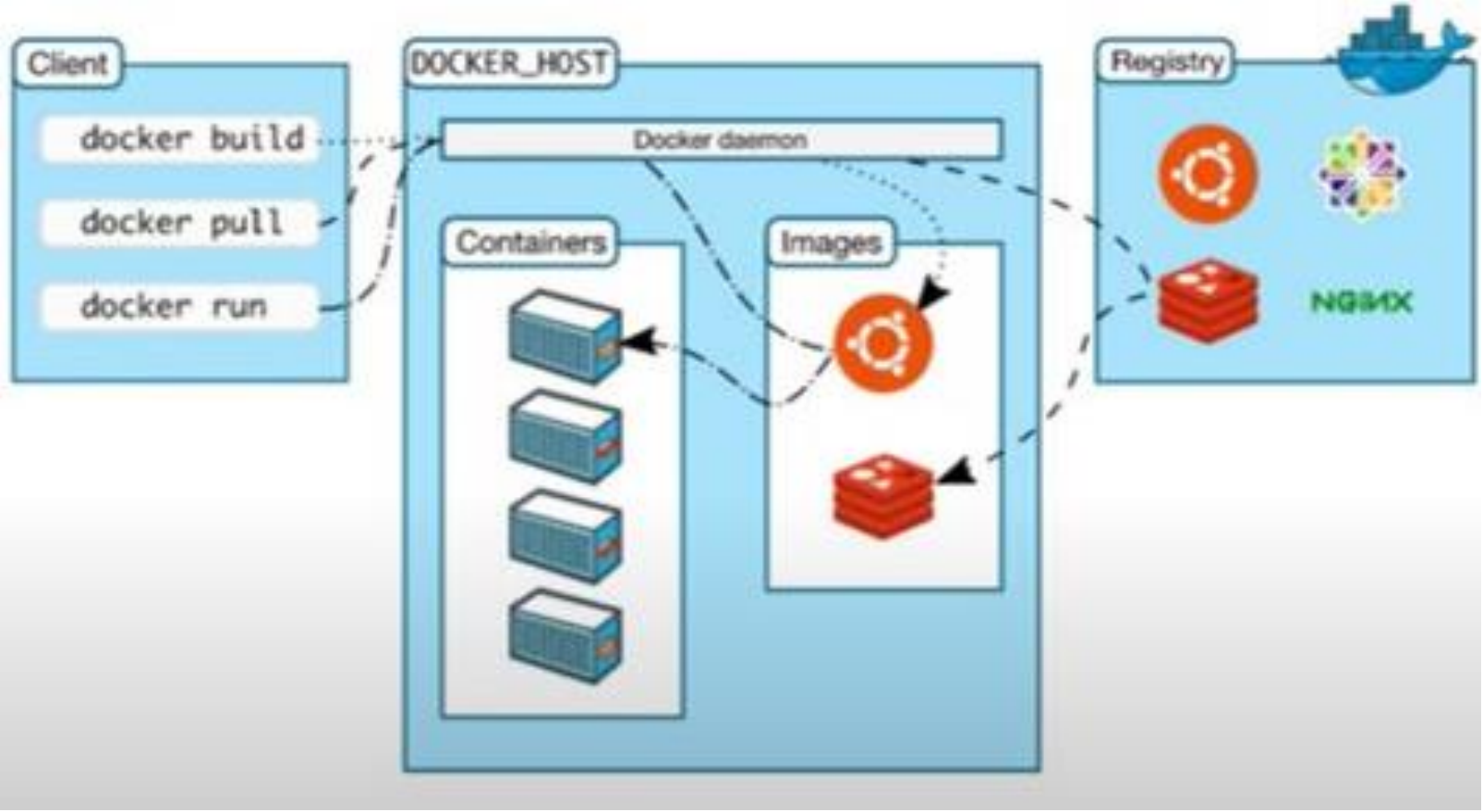
Virtual Machines



Containers

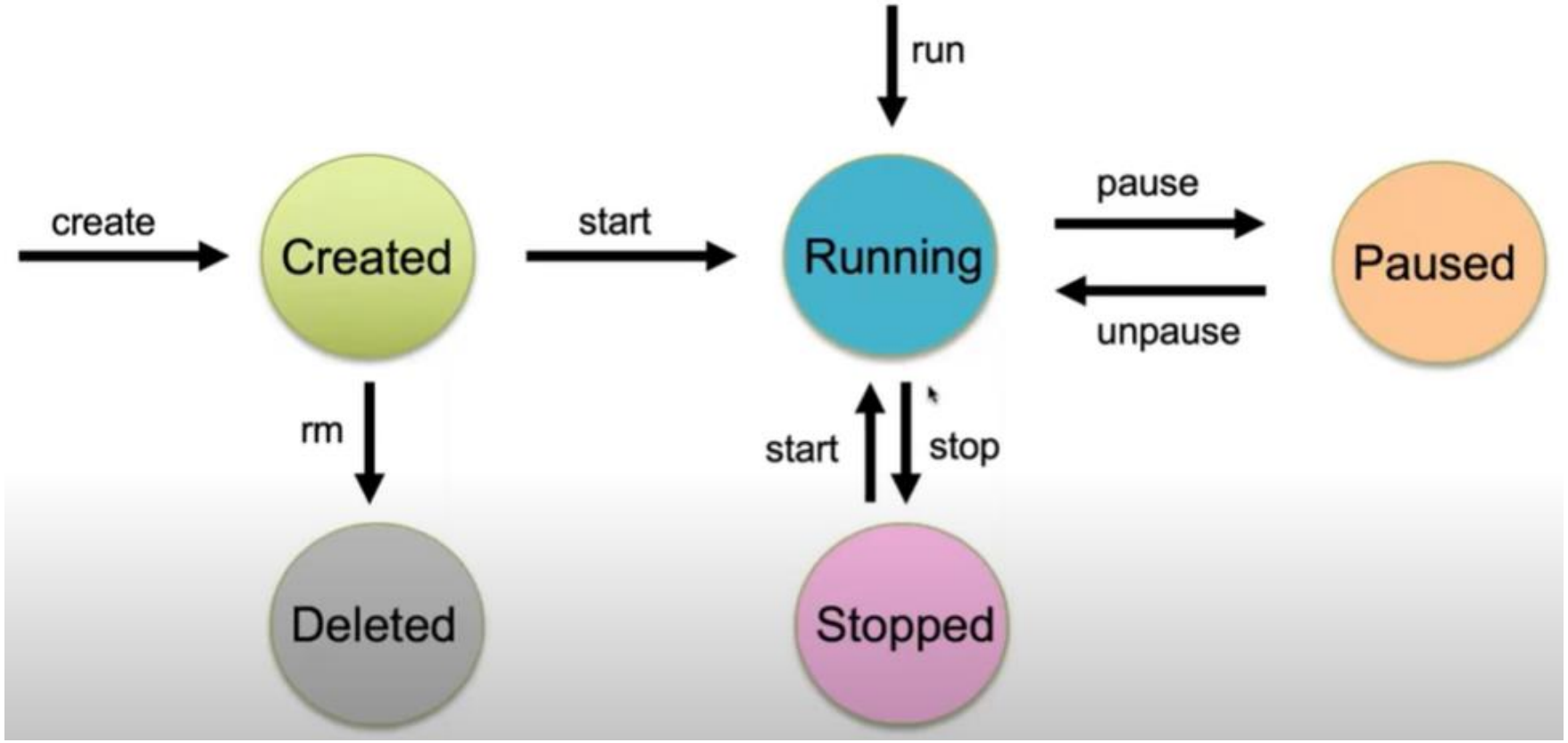
- Virtualization is software that makes computing environments independent of physical infrastructure,
- Are "Unit of software" that packages up code and all its dependencies
- Containers have reserved resources
- Virtualizes all except the shared OS

Docker Architecture



- Docker Daemond is the "master process" here
- Docker containers run images inside of themselves
- 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.
- Containers can communicate with each other if they belong to the same docker host

Container Lifecycle



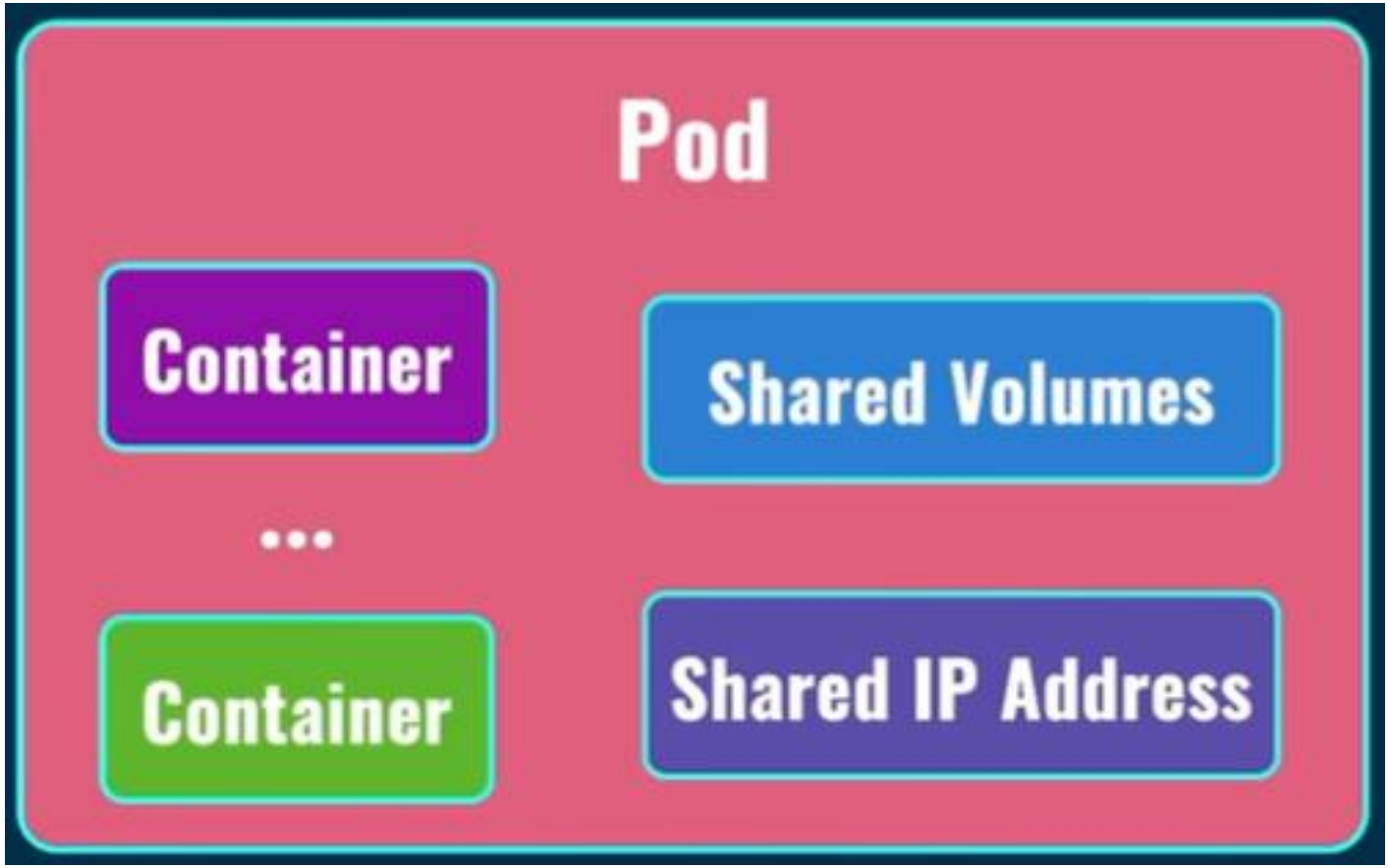
What does Kubernetes provide?

- Mechanism to deploy, maintain, and scale apps
- Edit and update running apps
- Scheduling apps as needed
- App crash management

What are Pods?

- Set of containers operate as part of the same workload
- A process that configures one or multiple containers
- Enables replicas of a container
- Edits no longer need to stop the app from being in production mode
- Enables communication between containers in different docker hosts
  - This makes them good for cloud computing
- Abstraction of containers
- Usually there is 1 container per pod

Elements of a Pod



Kubernetes Architecture