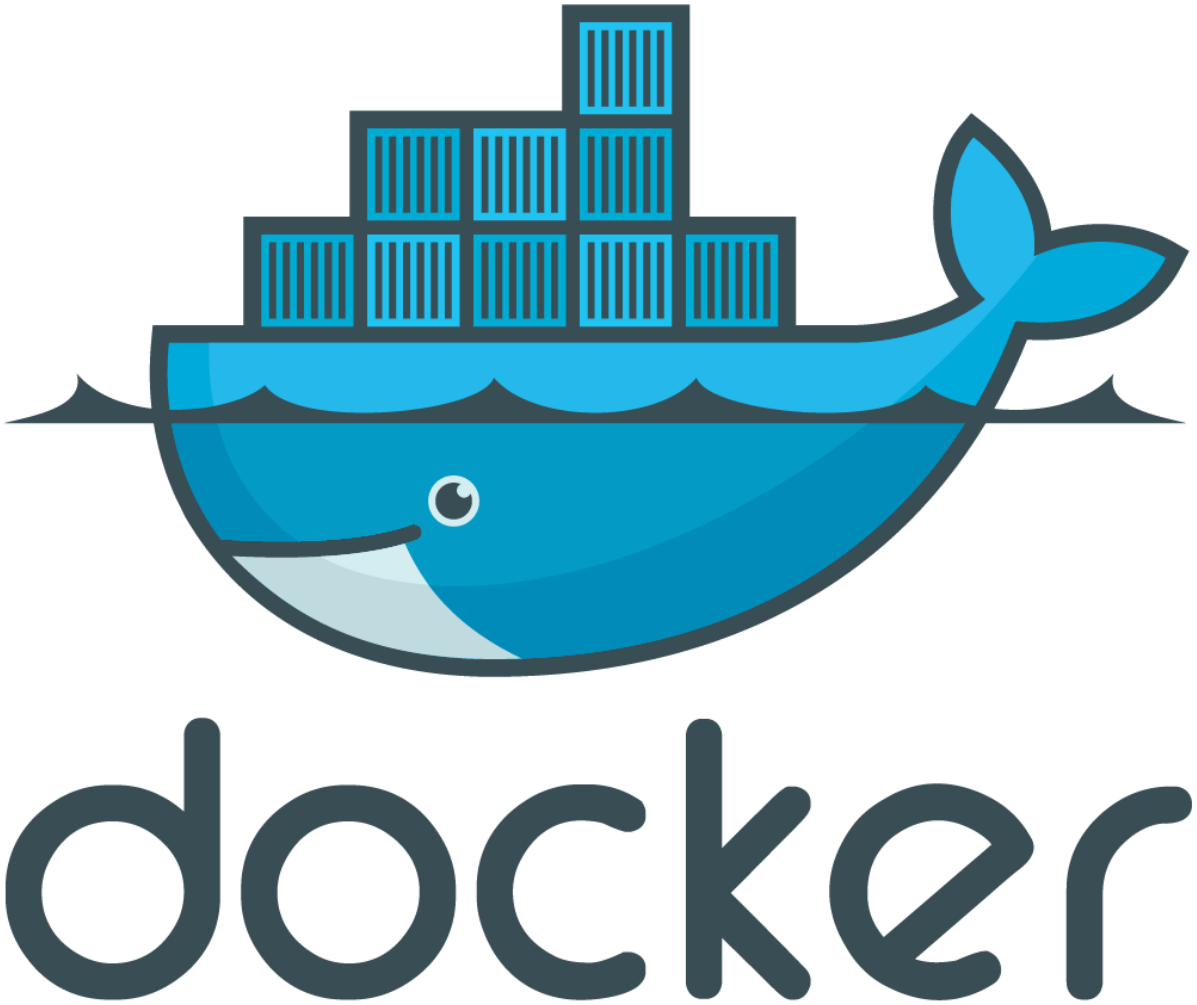

docker

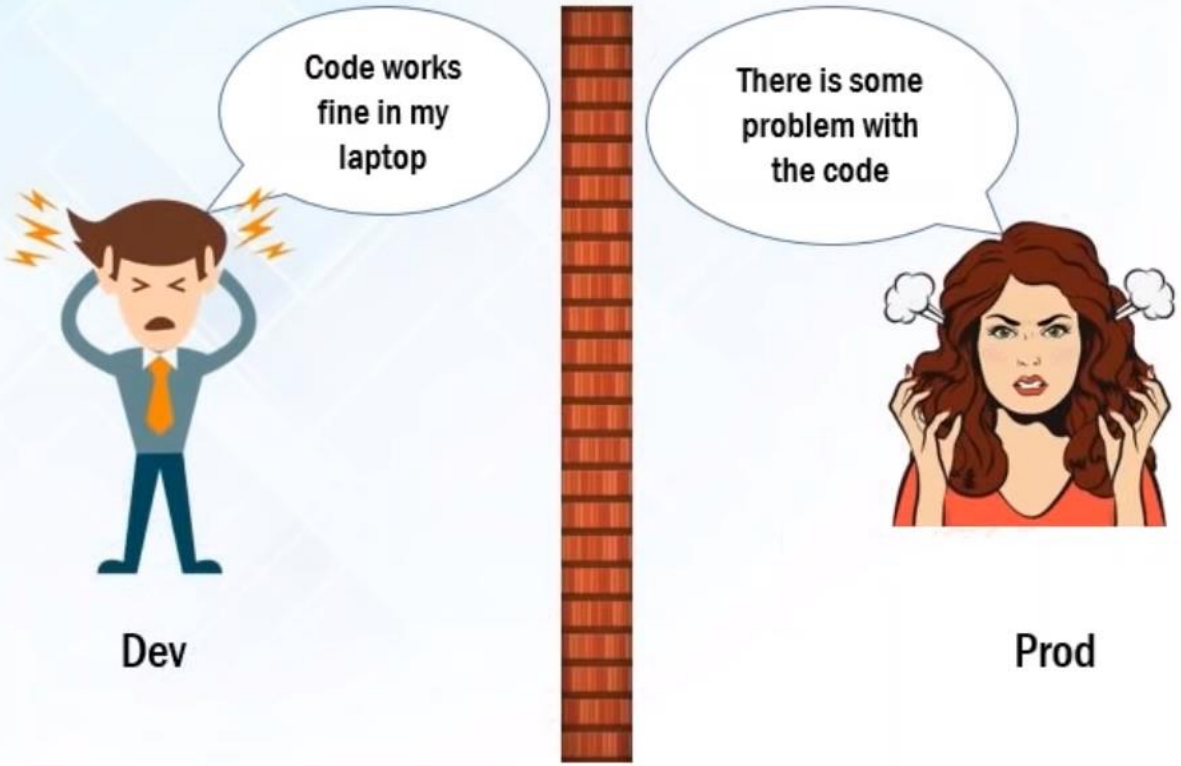
AGENDA:

- Overview
- Docker Installation
- Docker images, Containers, Architecture, Configurations
- Docker files
- Docker compose file
- Multi Stage Docker file
- Deploying microservices on Docker

Getting Started with Docker

Problems Before Docker

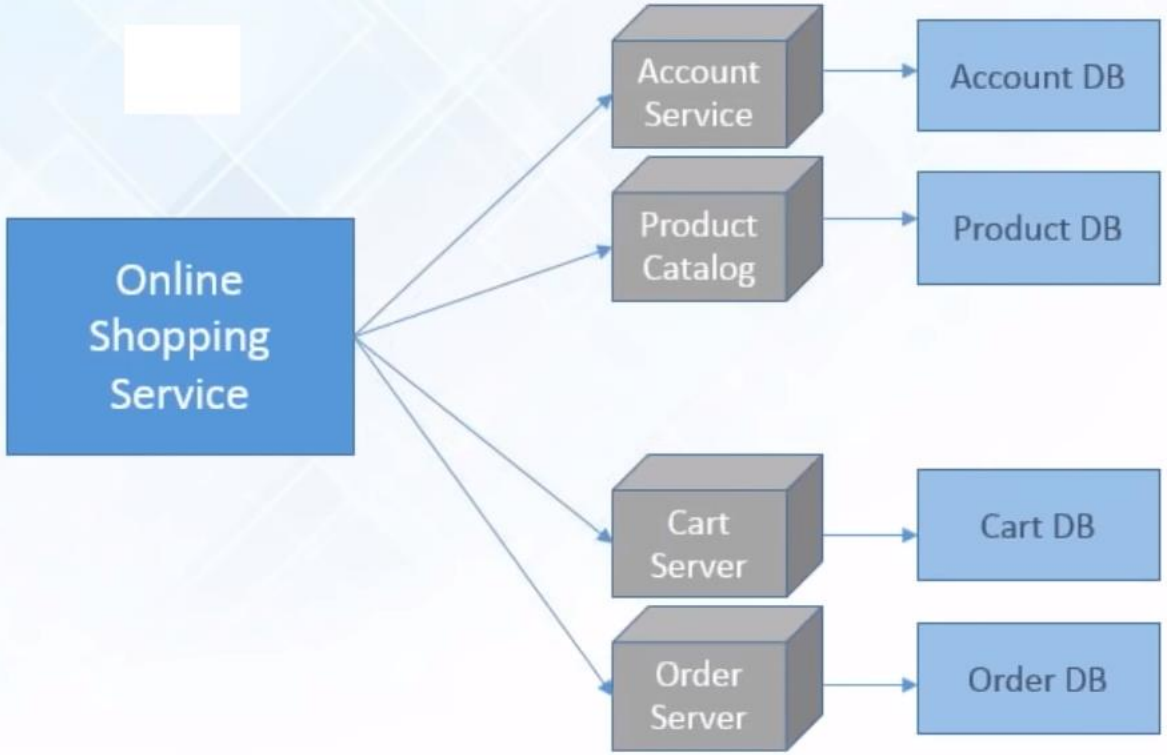
An application works in developer's laptop but not in testing or production. This is due to difference in computing environment between Dev, Test and Prod.



In Dev there can be a software that is upgraded and in Prod the old version of software might be present

Problems Before Docker

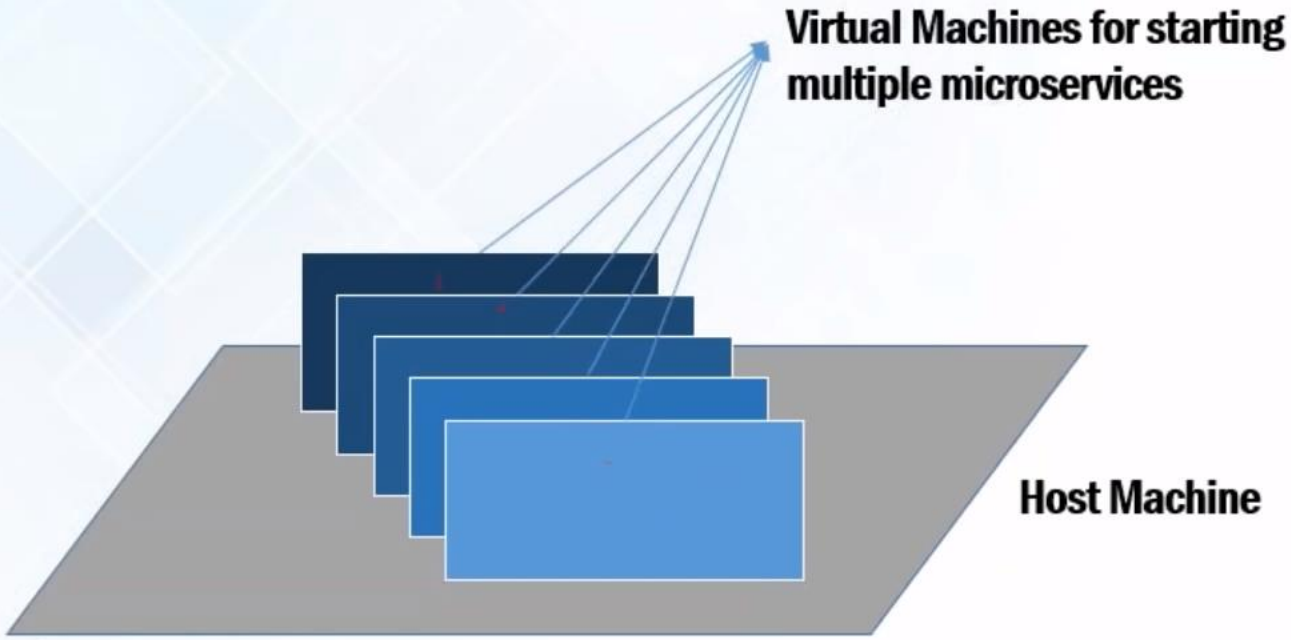
The idea behind microservices is that some types of applications become easier to build and maintain when they are broken down into smaller, composable pieces which work together. Each component is developed separately, and the application is then simply the sum of its constituent components.



For example imagine an online shop with separate microservices for user-accounts, product-catalog order-processing and shopping carts

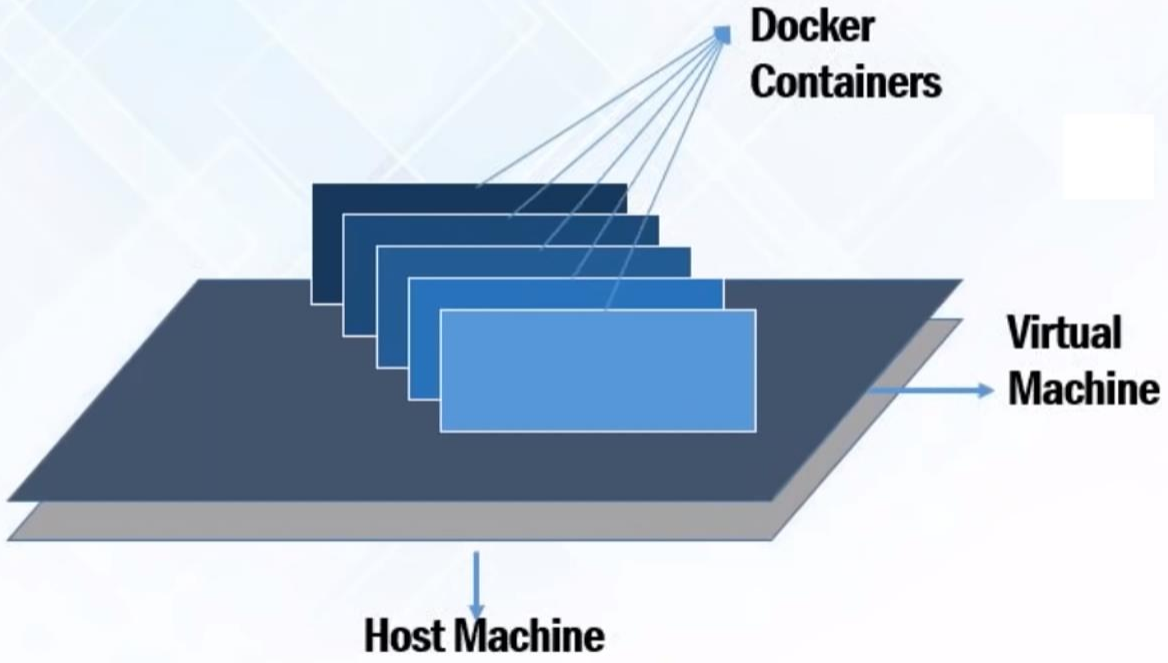
Problems Before Docker

Developing an application requires starting several of microservices in one machine. So if you are starting five of those services you require five VMs on that machine.



How Docker Solves These Problems

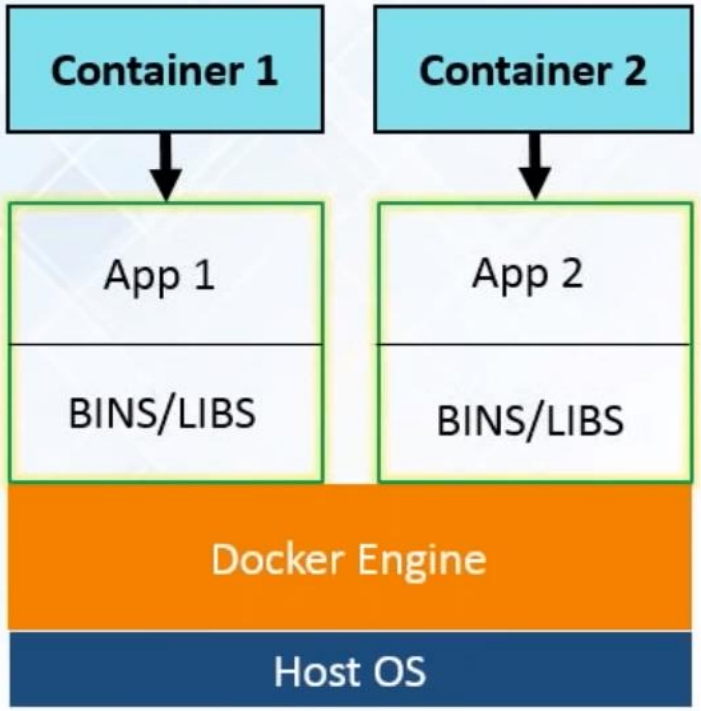
You can run several microservices in the same VM by running various Docker containers for each microservice.



Provides a consistent computing environment throughout the whole SDLC.

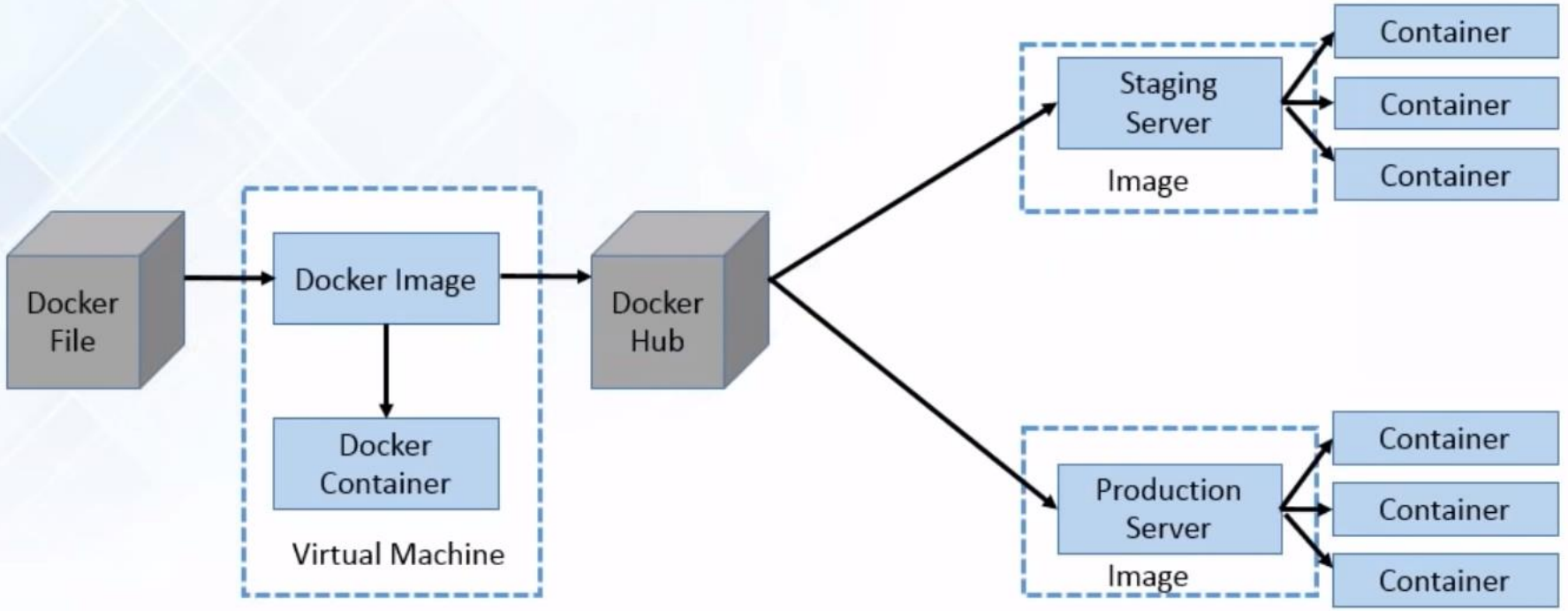
What Is Docker?

- Docker is a tool designed to make it easier to create, deploy, and run applications by using containers.
- Docker containers are lightweight alternatives to Virtual Machines and it uses the host OS.
- You don't have to pre-allocate any RAM in containers.



Docker In A Nutshell

- Docker file builds a Docker image and that image contains all the project's code
- You can run that image to create as many Docker containers as you want
- Then this Image can be uploaded on Docker hub, from Docker hub any one can pull the image and build a container



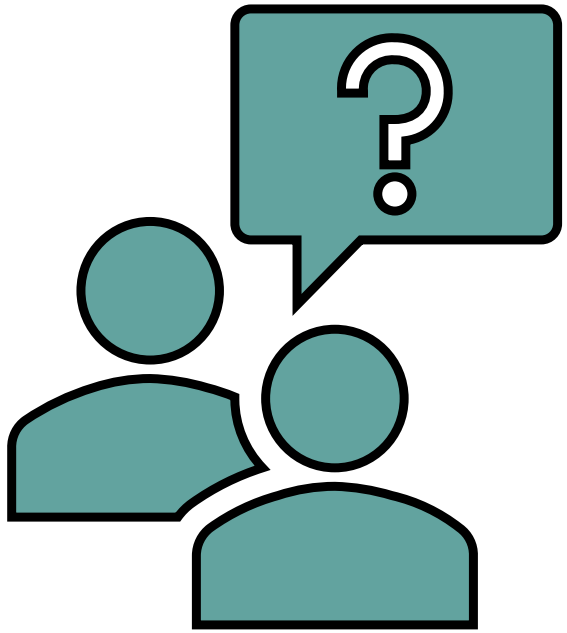
References

https://docs.docker.com/get-started/overview/

https://docs.docker.com/engine/install/ubuntu/

https://docs.docker.com/desktop/install/windows-install/

https://docs.docker.com/engine/reference/commandline/cli/

https://docs.docker.com/samples/

https://docs.docker.com/reference/