

Docker For Developer !



Problems

What are the problems has been fixed by docker

Problem 1

Why you should install dependancies in every environment we want to run the app.?!

Problem 2

How to run different services in the same host independently.?!

Problem 3

How to use different versions of your dependencies in your host and test it.?!

Problem 4

How to deploy your service automatically in a new host regardless of env.?!

Problem 5

How to manage performance and scale of your services effectively.?!

What Is Docker!



What Is Docker!

Docker is one of the tools that used the idea of the isolated resources to create a set of tools that allows applications to be packaged with all the dependencies installed and ran wherever wanted



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

What Is Container !



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 photograph of a port terminal showing a large stack of shipping containers. The containers are stacked in several rows, with some being loaded onto a truck. The containers are of various colors, including green, blue, red, and white. In the background, there are industrial buildings and cranes. The sky is clear and blue.

What Is Container!

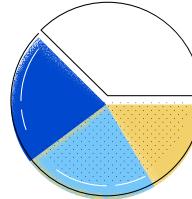
Container VS Virtual Machine



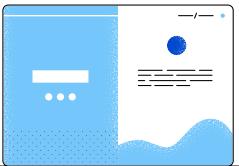
Containers



They don't need to have a full-blown OS inside



Share the same system resources



They are pretty lightweight and efficient.

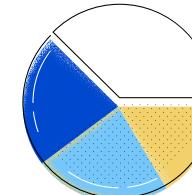


Allows efficient use of resources

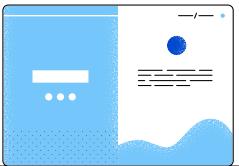
Virtual machine



They need to have a full-blown OS inside



Hardware-level virtualization

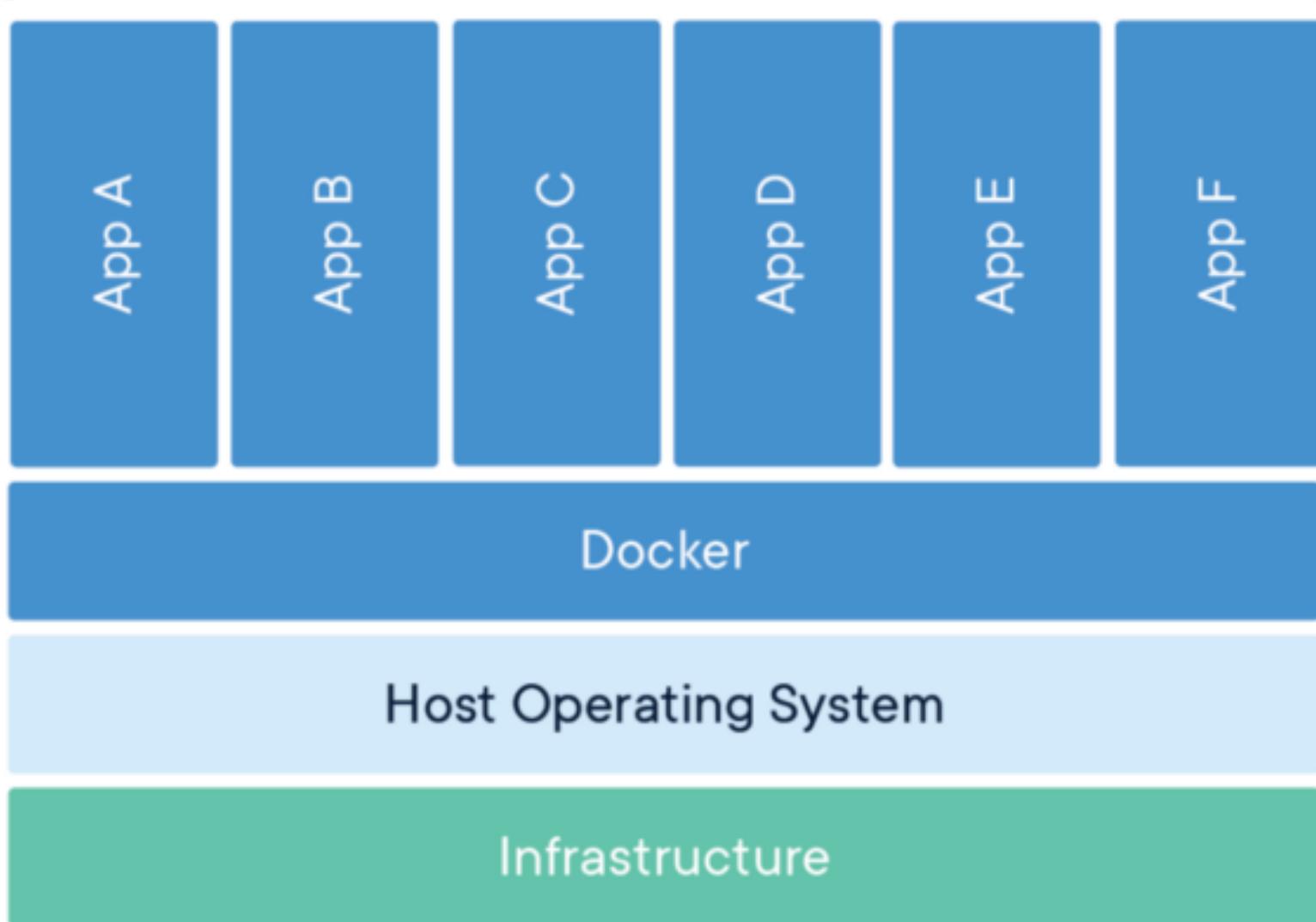


They are Heavyweight and less efficient.



Allow Limited performance of resources

Containerized Applications



Virtual Machine

App A

Guest
Operating
System

App B

Guest
Operating
System

App C

Guest
Operating
System

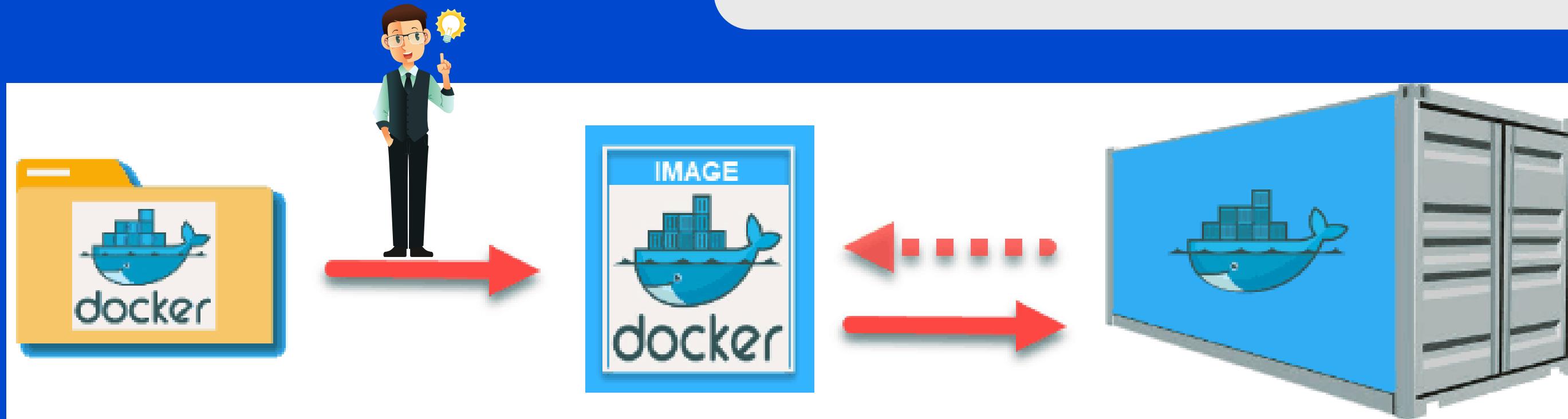
Hypervisor

Infrastructure

Is an immutable file that contains the source code, libraries, dependencies, tools, and other files needed for an application to run.

What is Image !

Its a snapshot or a template of your resources , and in common The container is an image in the runtime



DockerFile

The configuration file for your Container

```
FROM php:7.4-fpm
RUN php -r "copy('https://getcomposer.org/installer', 'composer-setup.php');" \
    && php composer-setup.php --install-dir=/usr/local/bin --filename=composer \
    && php -r "unlink('composer-setup.php');"\ \
    && docker-php-ext-install pdo pdo_mysql

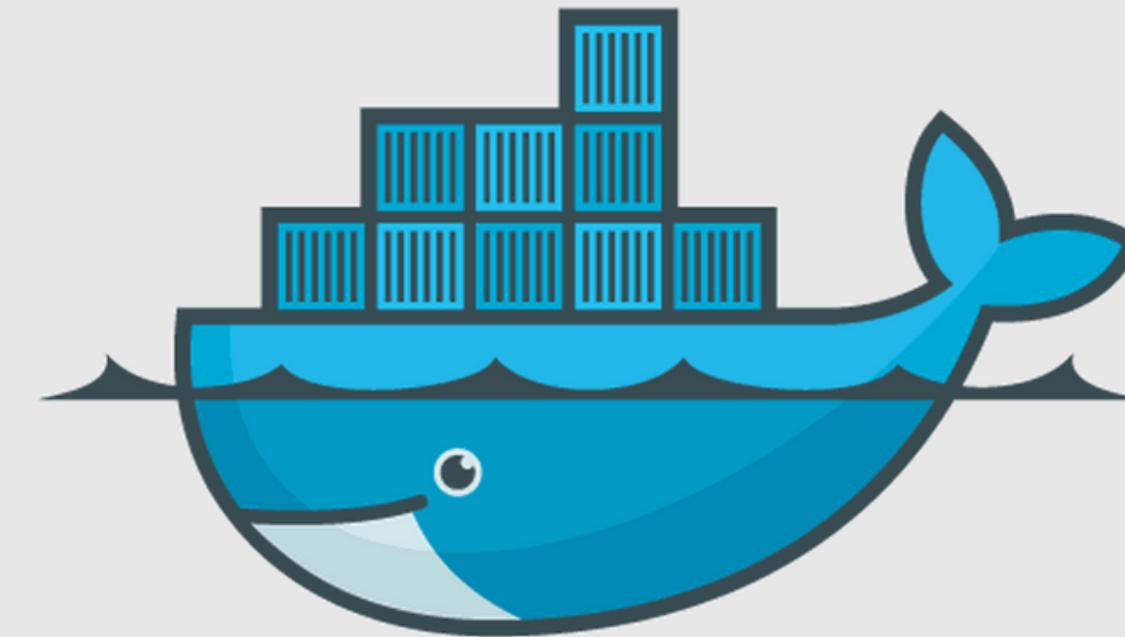
RUN mv "$PHP_INI_DIR/php.ini-production" "$PHP_INI_DIR/php.ini"
COPY .docker/php/custom.ini $PHP_INI_DIR/conf.d/

COPY .docker/php/wait-for-it.sh /usr/bin/wait-for-it
RUN chmod +x /usr/bin/wait-for-it
RUN pecl install -o -f redis
RUN rm -rf /tmp/pear
RUN docker-php-ext-enable redis
WORKDIR /var/www/html

CMD wait-for-it mysql:3306 -- bin/console doctrine:migrations:migrate ; php-fpm
```

Docker Hub

The store for Docker images



docker

It is a service provided by Docker for
finding and sharing container images
with your team.

Docker Compose

DEFINITION

Compose is a tool for defining and running multi-container Docker applications

CONFIGURATION

YAML file to configure your application's service

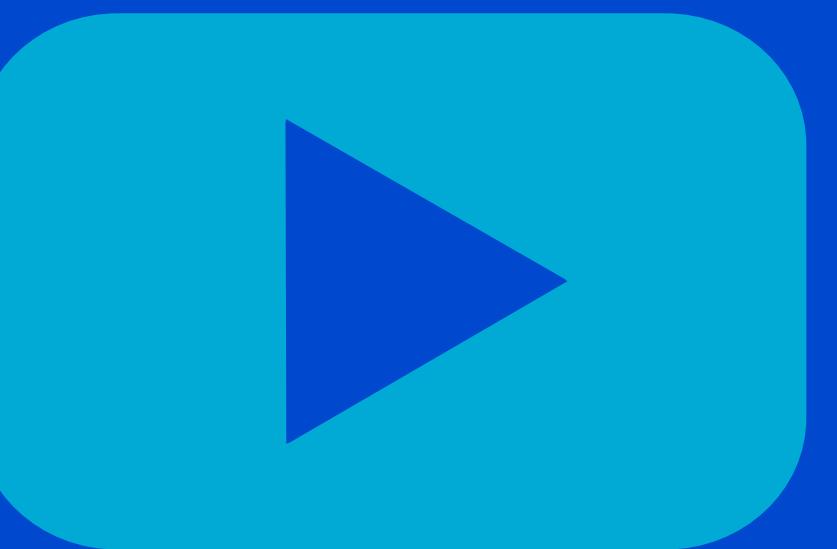
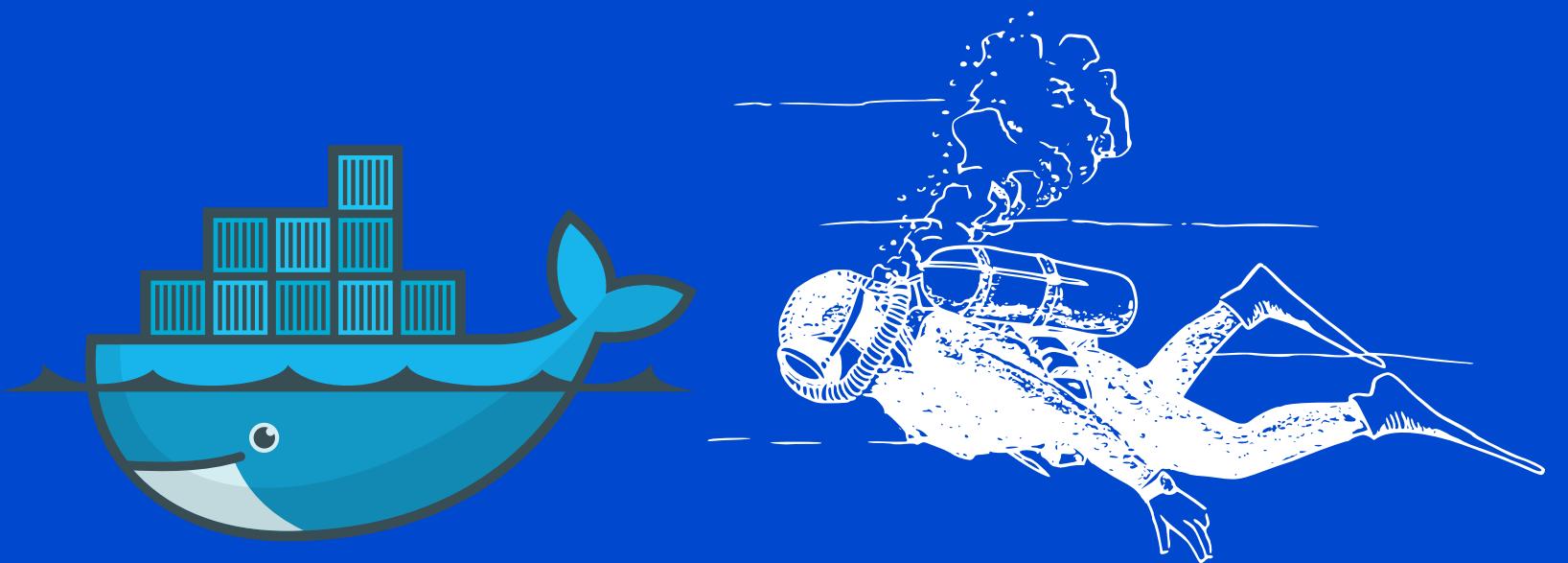
FEATURES

One of the best feature is Only recreate containers that have changed

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Lets Dive In Docker

How to use Docker in
practice



Next Video

