

Understanding Docker for Beginner

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Topic

- FAQs in PHP development
- Docker Basic
- Docker Compose Basic
- CI/CD pipeline using Docker and Jenkins.

Faqs in php development



Environments

Test

Deployment

Environment

PHP Version 7.1/7.2/7.3

Composer Require ext-***

php.ini

php-fpm.conf

Test

- Staging vs Production vs Local
- Only postman

Deployment

- Using PHP Deployer
- SSH git workflow
- Deploy on dashboard / exec shell
- Manual or semi-automated



Docker Basic



CONTAINER

Tomcat

Java

Debian

CONTAINER

PHP

MySQL

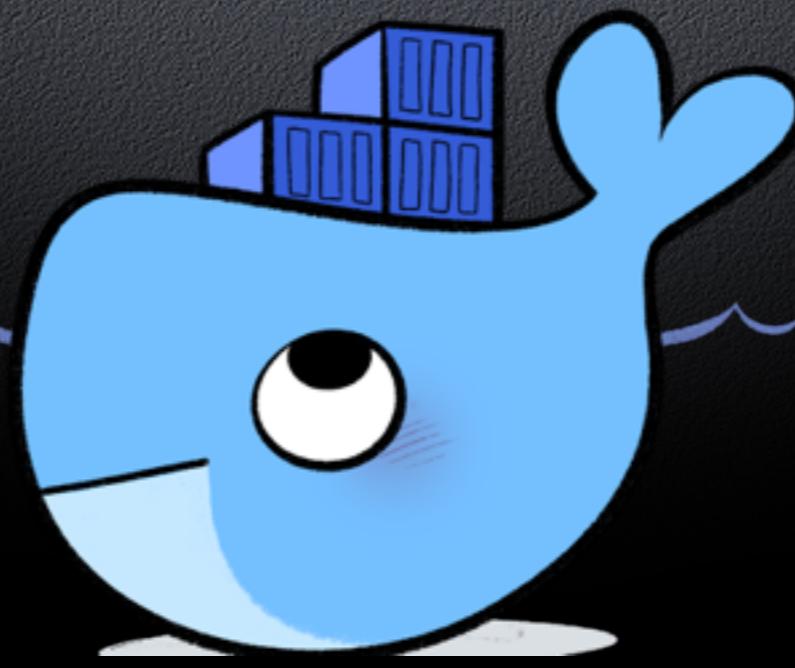
Ubuntu

CONTAINER

Static Binary

Alpine

Kernel



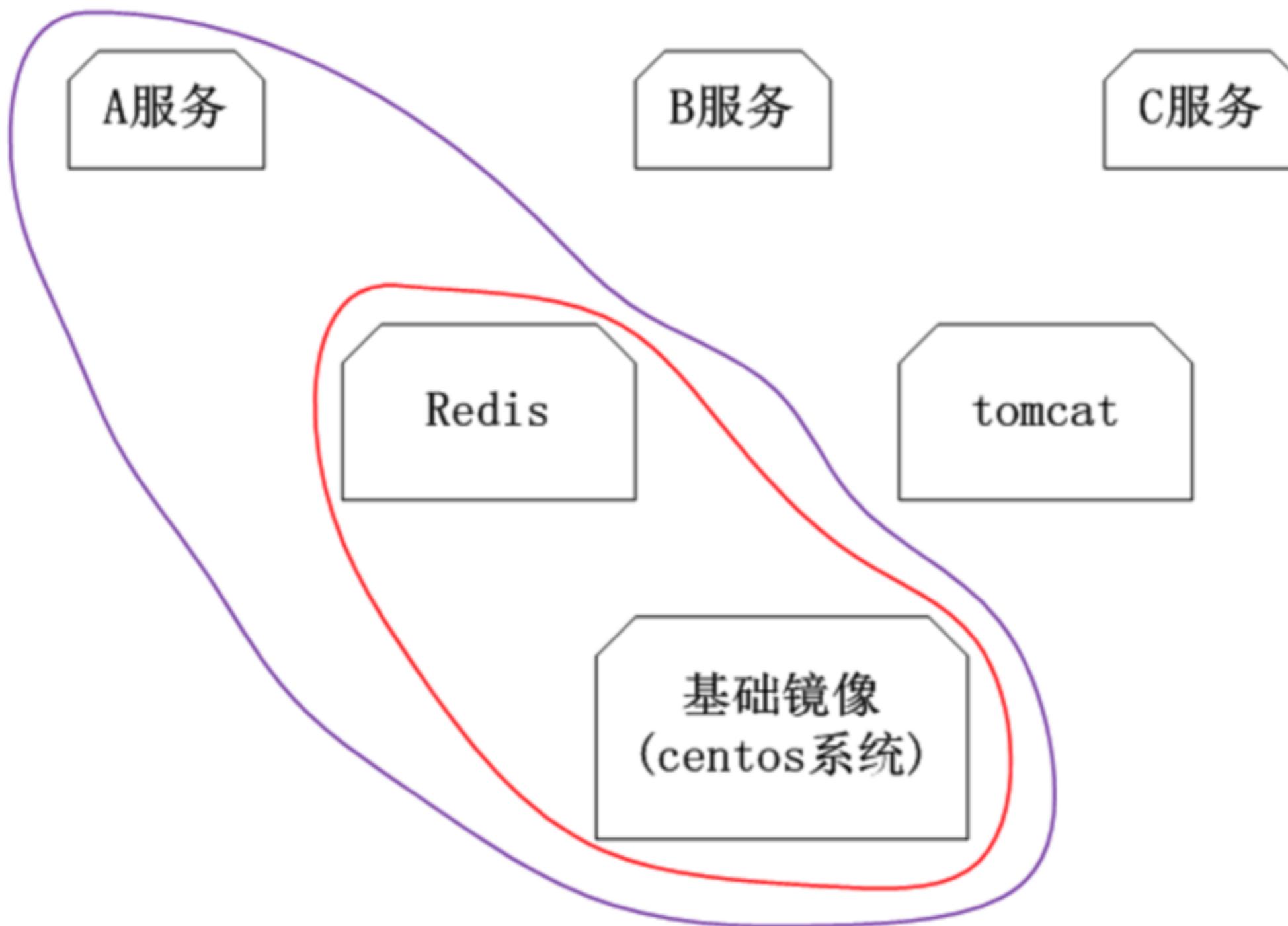
In a narrow sense, it is a process. In a broad sense, it is a virtual container. The terminology is the application container engine.

Image
Container
Repository

Image

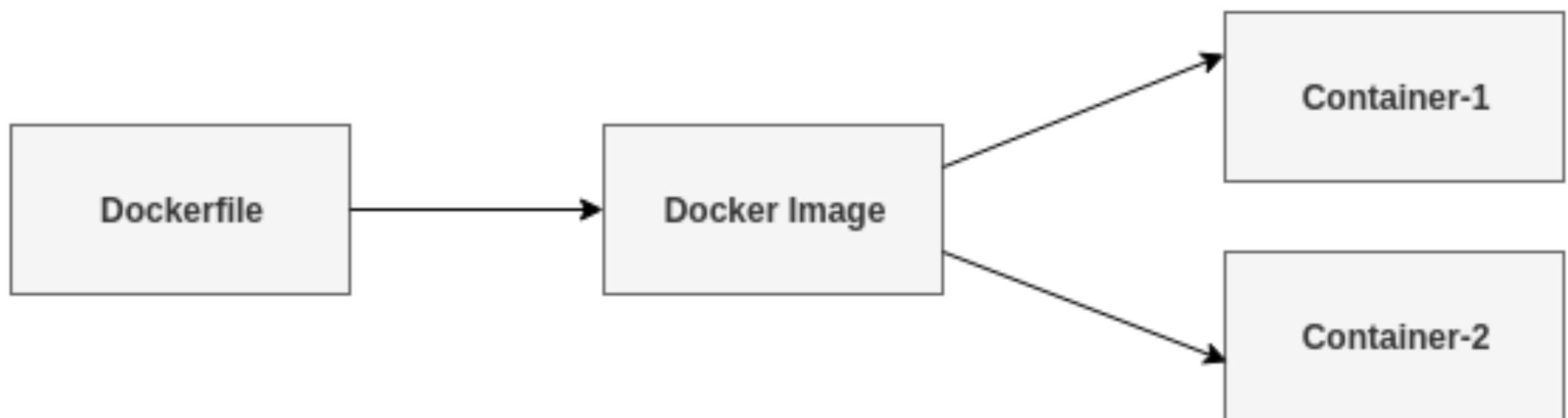
- Build a read-only template of the container
- Like vm snapshot
- Tiered storage
- Docker images

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
redis	4.0	e1a73233e3be	13 months ago	83.4MB
mysql	5.6	1f47fade220d	13 months ago	256MB
tianon/true	latest	191a8fe8c333	22 months ago	125B
webdevops/apache	ubuntu-16.04	7d3306eb3be3	2 years ago	252MB



逐步执行

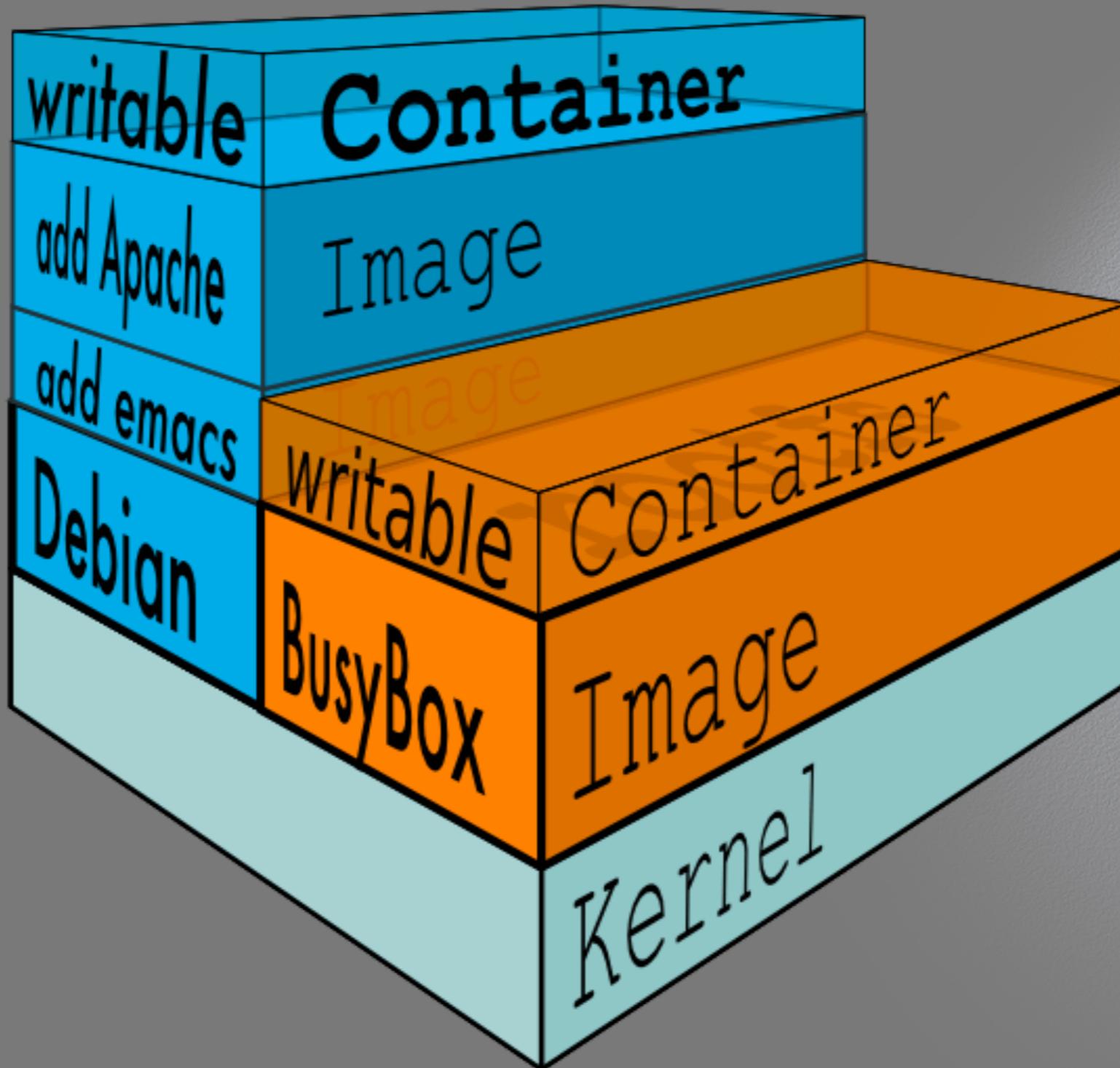
```
FROM centos:latest
MAINTAINER lizhenliang
RUN yum install gcc -y
COPY run.sh /usr/bin
EXPOSE 80
CMD [ "run.sh" ]
```



Container

- Instance created from <image>
- Run/Stop/Rm/Start/Restart
- docker ps {-a}
- Containers are isolated from

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORT
NAME					
5c767593b521	dockerelk_logstash	"/usr/local/bin/dock..."	6 weeks ago	Up 30 seconds	0.0.
0.0:5000->5000/tcp, 0.0.0:9600->9600/tcp,	5044/tcp	dockerelk_logstash_1			
9e88ed5f0e4c	dockerelk_filebeat	"/usr/local/bin/dock..."	6 weeks ago	Up 34 seconds	
		dockerelk_filebeat_1			
158a08829b00	dockerelk_elasticsearch	"/usr/local/bin/dock..."	8 weeks ago	Up 33 seconds	0.0.
0.0:9200->9200/tcp, 0.0.0:9300->9300/tcp		dockerelk_elasticsearch_1			
cc92a526c1bb	dockerelk_kibana	"/usr/local/bin/kiba..."	2 months ago	Up 30 seconds	0.0.
0.0:5601->5601/tcp		dockerelk_kibana_1			



Repository

Docker hub [https://
hub.docker.com](https://hub.docker.com)

Fully own your images
distribution pipeline

Integrate image storage

Public/Private



docker hub



php7.2

Explore

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Get Started



binhle410/php7.2-fpm ☆

By [binhle410](#) • Updated a year ago

Pulls 100K+

Container

Overview

Tags

Dockerfile

Builds

php7.2-fpm

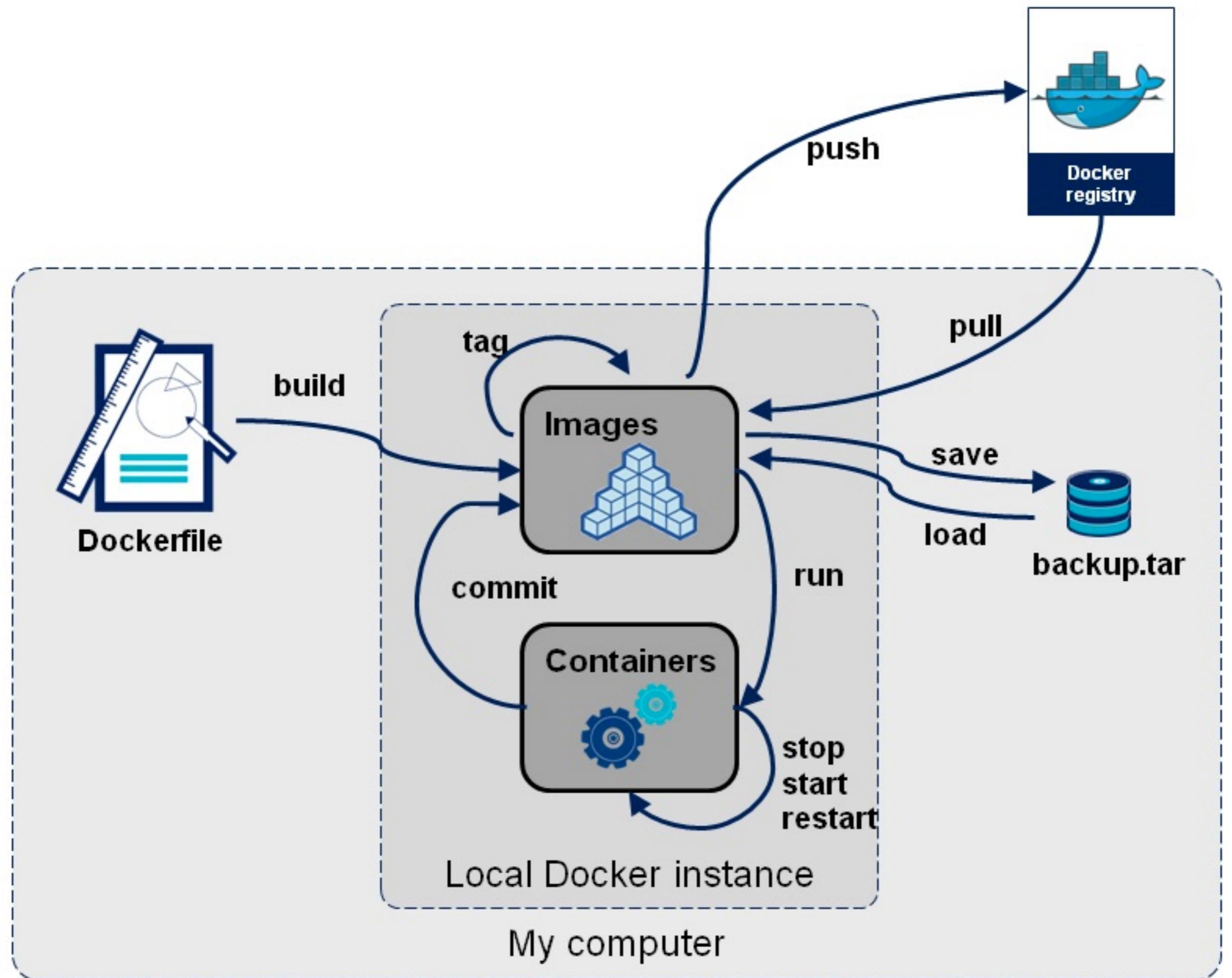
Docker Pull Command

`docker pull binhle410/php7.2-fpm`

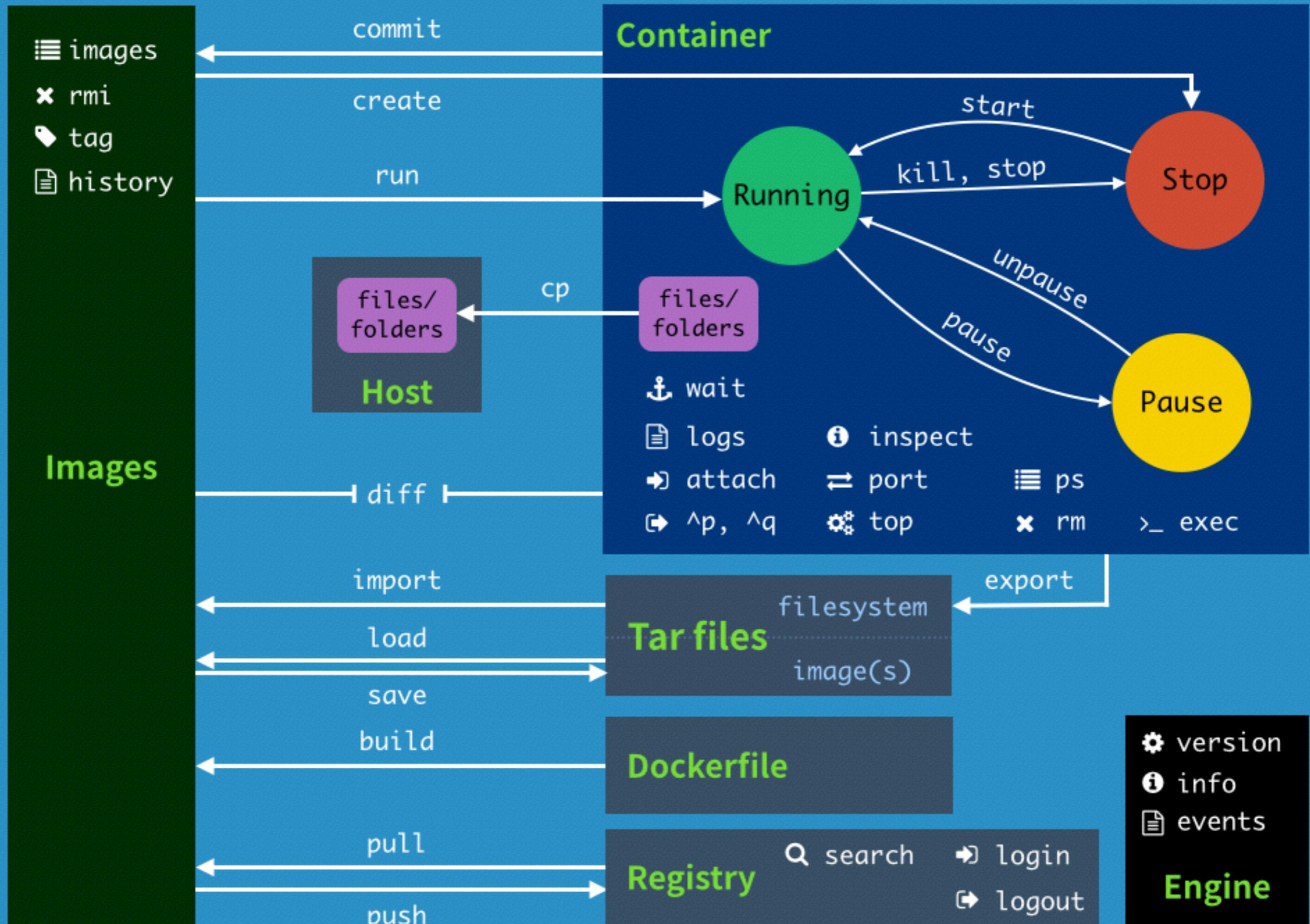


docker pull binhle410/php7.2-fpm

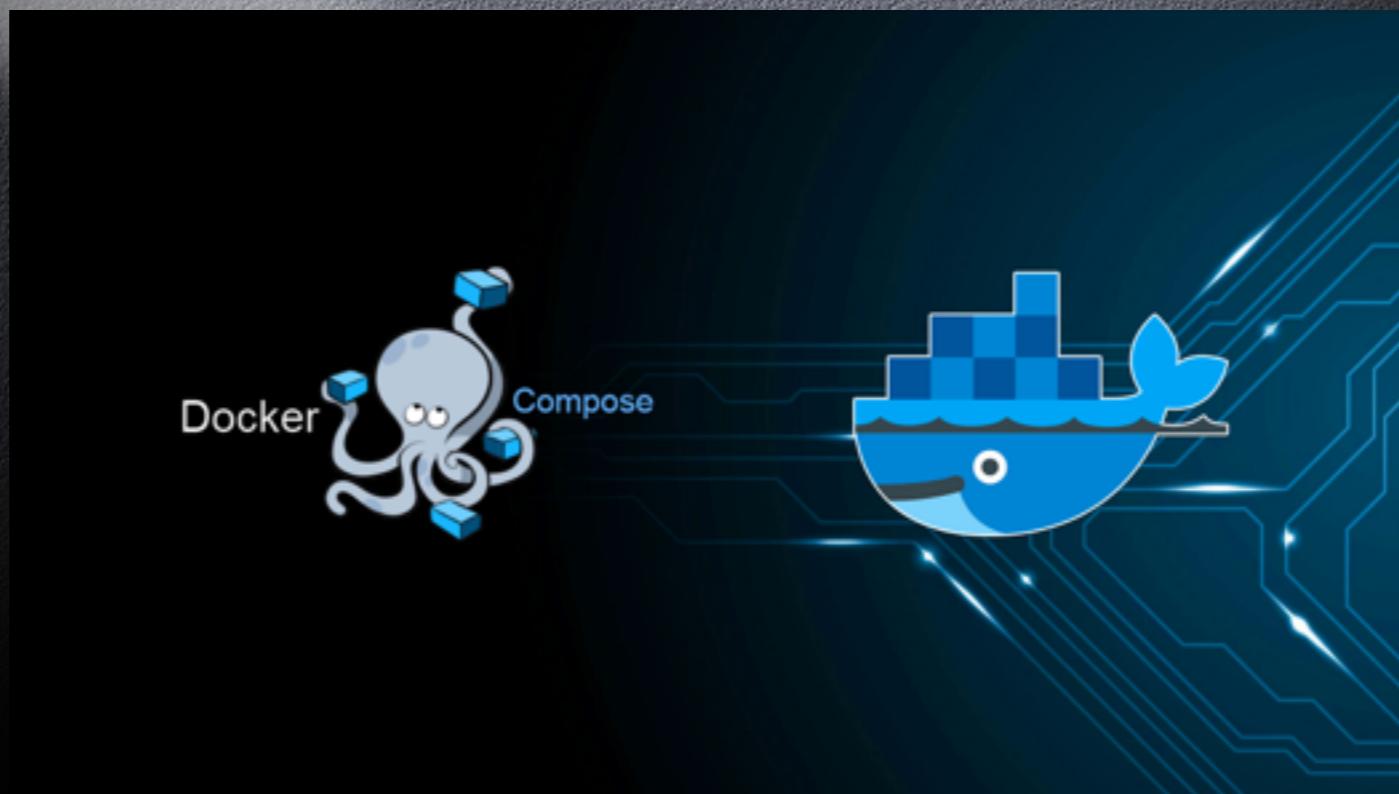
Docker Commands



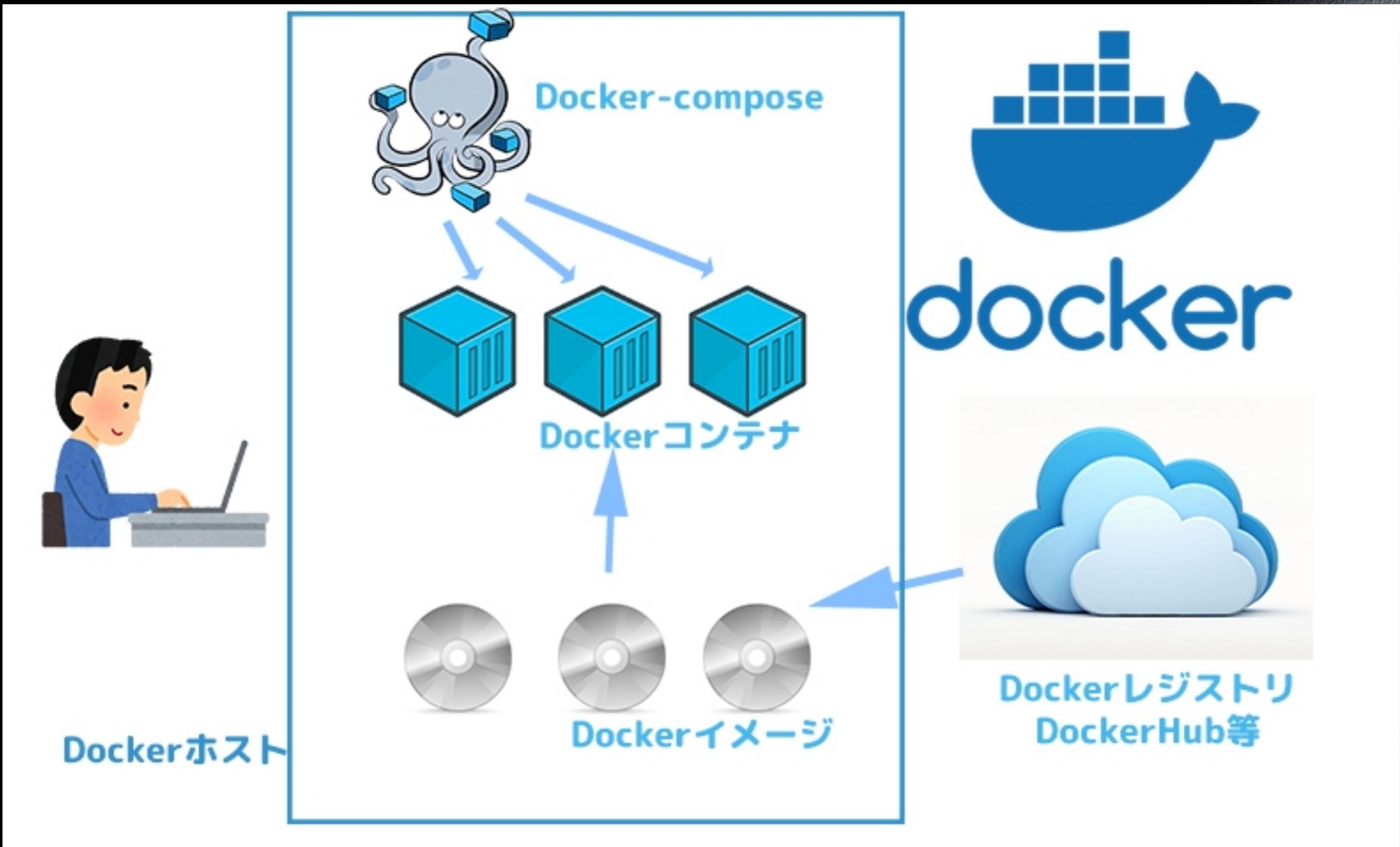
Docker Commands Diagram



Docker Compose

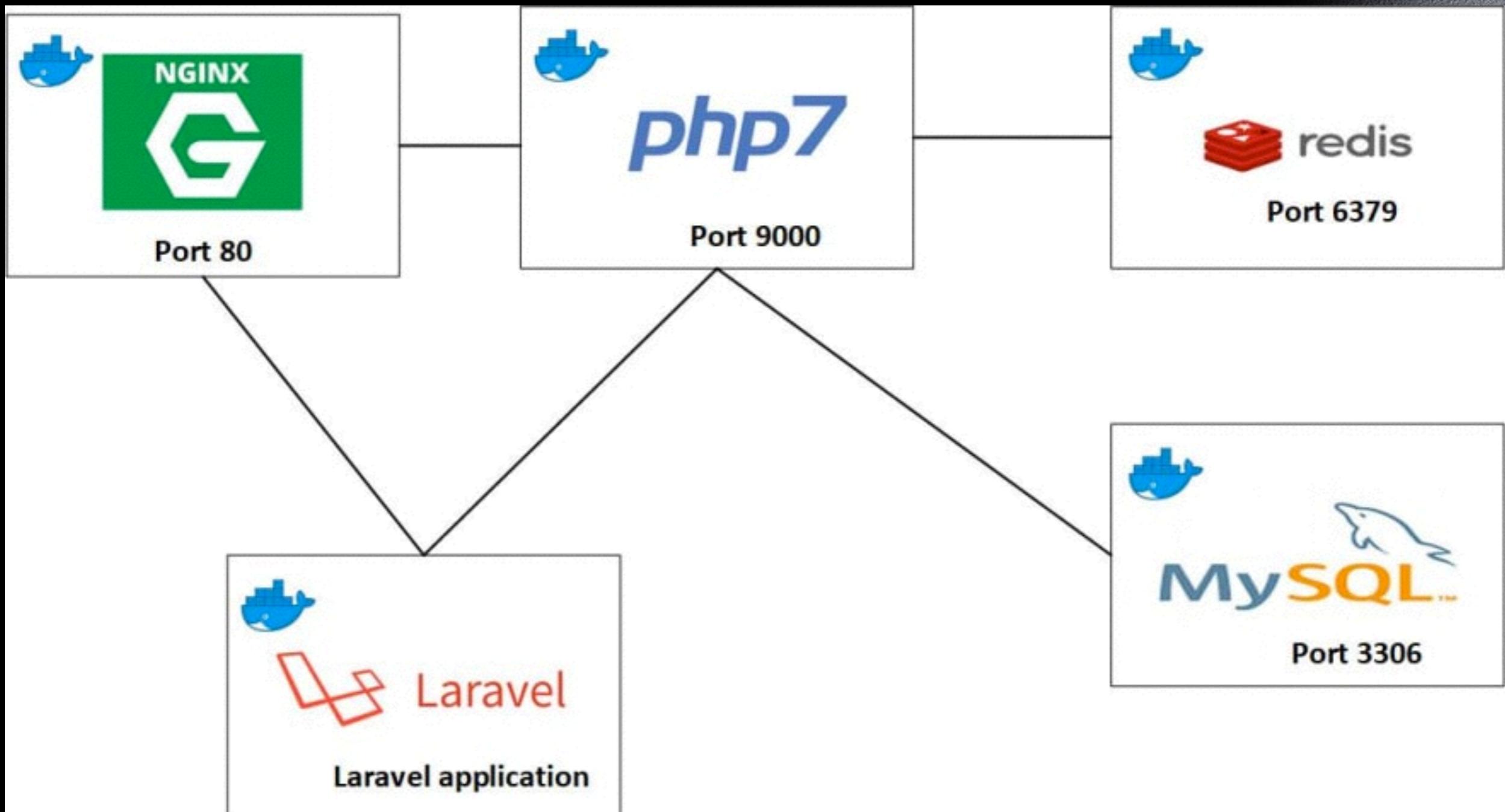


- Defining and running multi-container Docker applications
- docker-compose.yml/.env
- Create and start all the services from your configuration.



docker-compose commands

Command	Description
docker-compose up	(Re)build services
docker-compose kill	Kill the containers
docker-compose logs	Show the logs of the containers
docker-compose down	Stop and remove images, containers, volumes and networks
docker-compose rm	Remove stopped containers



Examples

- docker laravel
- laravel-blog
- docker-elk

CI/CD pipeline using Docker



- Jenkins Server
- Github Hook
- Jenkinsfile
- Dockerfile
- docker-compose.yml

Administrative monitors...

Jenkins Location

Jenkins URL

<https://ci.uniqueway.cc/>



System Admin e-mail address

tech@uniqueway.com



Lockable Resources Manager

Lockable Resources

Resource

Name

staging-server

Description

Labels

Reserved by

Delete

Add Lockable Resource

GitHub

Save

Apply

Options

Collaborators & teams

Branches

Webhooks

Notifications

Integrations & services

Webhooks

Add webhook

Webhooks allow external services to be notified when certain events happen. When the specified events happen, we'll send a POST request to each of the URLs you provide. Learn more in our [Webhooks Guide](#).

We will also send events from this repository to your [organization webhooks](#).

✓ <https://ci.uniqueway.cc/github-webhook/> (pull_request and push)

Edit

Delete

Visibility changes

Repository changes from private to public.

Pull request reviews

Pull request review submitted, edited, or dismissed.

Pushes

Git push to a repository.

Pull requests

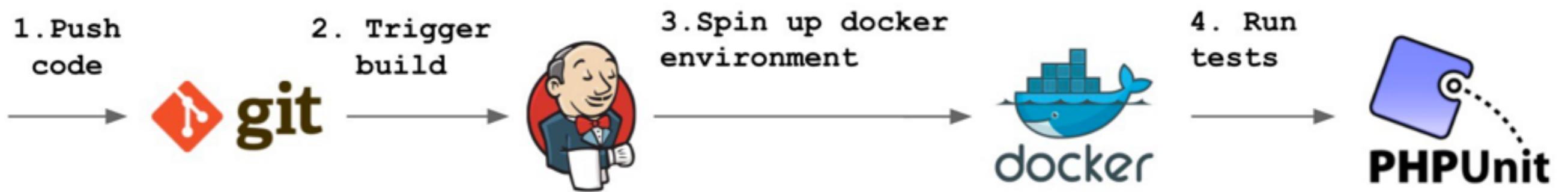
Pull request opened, closed, reopened, edited, assigned, unassigned, review requested, review request removed, labeled, unlabeled, synchronized, ready for review, locked, or unlocked.

Pull request review comments

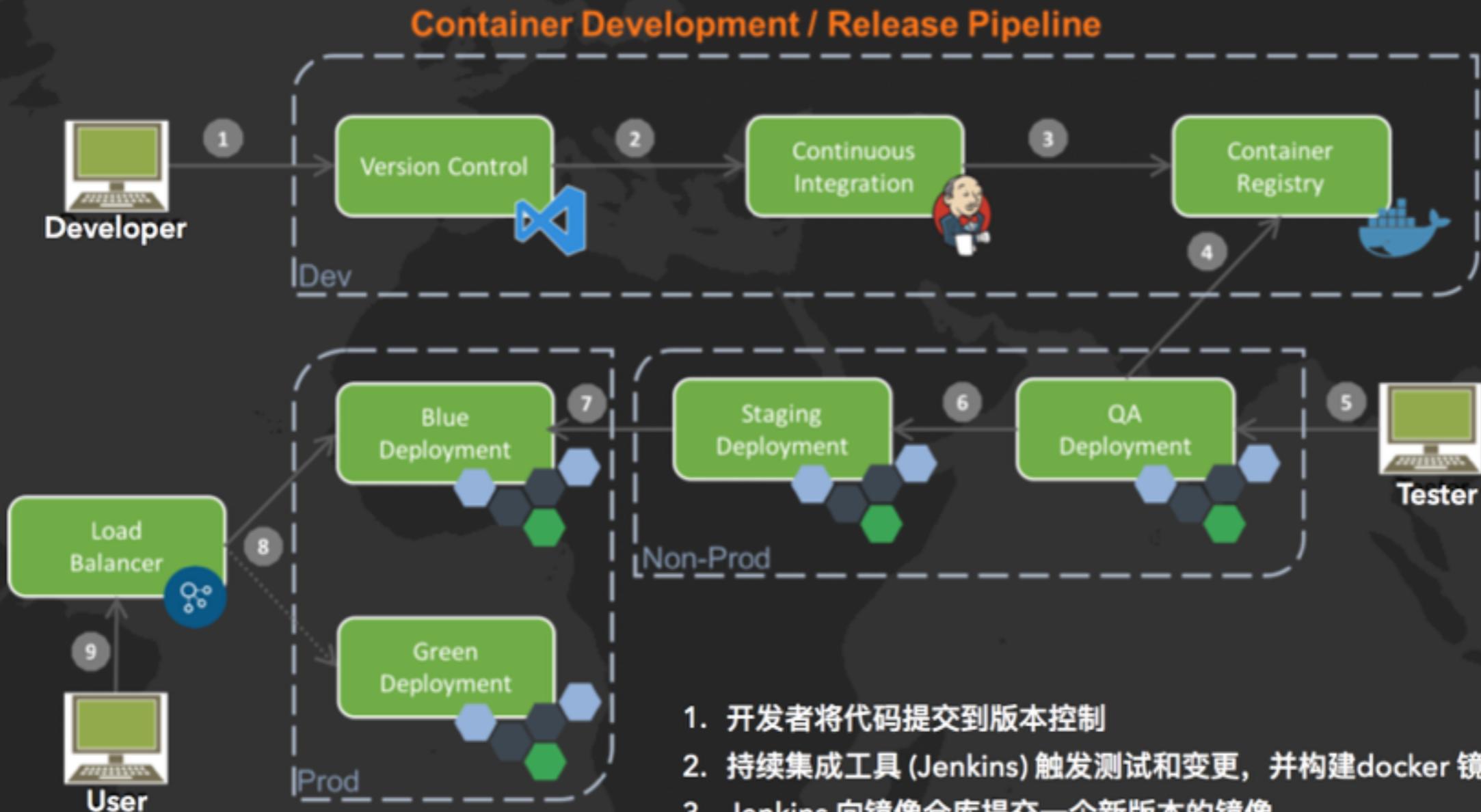
Pull request diff comment created, edited, or deleted.

Releases

Release created, edited, published, unpublished, or deleted.



Docker化的开发流程



1. 开发者将代码提交到版本控制
2. 持续集成工具 (Jenkins) 触发测试和变更，并构建Docker 镜像
3. Jenkins 向镜像仓库提交一个新版本的镜像
4. QA 服务器端从镜像仓库拉取镜像，运行并测试
5. 开始在非生产环境 / 生产环境进行测试
6. 如果测试通过，预发布环境（Staging Deployment）会拉取这个镜像
7. 如果测试通过，“Blue” 生产环境(非在线)会拉取这个镜像
8. 镜像最终在“Green” 生产环境发布，所有用户都可以访问到新的变更

Summary

- Environment -> The code is the environment
- Test -> Environmental reuse
- Deployment -> Second pole is released to all scenes

Docker 不是技术创新，而是一种新的思维方式，
表面改变了运维方式，实质改变了交付方式

THANKS

Q & A