# Docker

## Docker Base

### 常见命令

## List Docker CLI commands

docker

docker container --help

## Display Docker version and info

docker --version

docker version

docker info

## Execute Docker image

docker run hello-world

## List Docker images

docker image ls

## List Docker containers (running, all, all in quiet mode)

docker container ls

docker container ls --all

docker container ls -aq

docker build -t friendlyhello . # Create image using this directory's Dockerfile

docker run -p 4000:80 friendlyhello # Run "friendlyhello" mapping port 4000 to 80

docker run -d -p 4000:80 friendlyhello # Same thing, but in detached mode

docker container ls # List all running containers

docker container ls -a # List all containers, even those not running

docker container stop <hash> # Gracefully stop the specified container

docker container kill <hash> # Force shutdown of the specified container

docker container rm <hash> # Remove specified container from this machine

docker container rm $(docker container ls -a -q) # Remove all containers

docker image ls -a # List all images on this machine

docker image rm <image id> # Remove specified image from this machine

docker image rm $(docker image ls -a -q) # Remove all images from this machine

docker login # Log in this CLI session using your Docker credentials

docker tag <image> username/repository:tag # Tag <image> for upload to registry

docker push username/repository:tag # Upload tagged image to registry

docker run username/repository:tag # Run image from a registry

docker stack ls # List stacks or apps

docker stack deploy -c <composefile> <appname> # Run the specified Compose file

docker service ls # List running services associated with an app

docker service ps <service> # List tasks associated with an app

docker inspect <task or container> # Inspect task or container

docker container ls -q # List container IDs

docker stack rm <appname> # Tear down an application

docker swarm leave --force # Take down a single node swarm from the manager

Docker 常用命令

Management Commands:

builder Manage builds

config Manage Docker configs

container Manage containers

context Manage contexts

image Manage images

network Manage networks

node Manage Swarm nodes

plugin Manage plugins

secret Manage Docker secrets

service Manage services

stack Manage Docker stacks

swarm Manage Swarm

system Manage Docker

trust Manage trust on Docker images

volume Manage volumes

Commands:

attach Attach local standard input, output, and error streams to a running container

build Build an image from a Dockerfile

commit Create a new image from a container's changes

cp Copy files/folders between a container and the local filesystem

create Create a new container

deploy Deploy a new stack or update an existing stack

diff Inspect changes to files or directories on a container's filesystem

events Get real time events from the server

exec Run a command in a running container

export Export a container's filesystem as a tar archive

history Show the history of an image

images List images

import Import the contents from a tarball to create a filesystem image

info Display system-wide information

inspect Return low-level information on Docker objects

kill Kill one or more running containers

load Load an image from a tar archive or STDIN

login Log in to a Docker registry

logout Log out from a Docker registry

logs Fetch the logs of a container

pause Pause all processes within one or more containers

port List port mappings or a specific mapping for the container

ps List containers

pull Pull an image or a repository from a registry

push Push an image or a repository to a registry

rename Rename a container

restart Restart one or more containers

rm Remove one or more containers

rmi Remove one or more images

run Run a command in a new container

save Save one or more images to a tar archive (streamed to STDOUT by default)

search Search the Docker Hub for images

start Start one or more stopped containers

stats Display a live stream of container(s) resource usage statistics

stop Stop one or more running containers

tag Create a tag TARGET\_IMAGE that refers to SOURCE\_IMAGE

top Display the running processes of a container

unpause Unpause all processes within one or more containers

update Update configuration of one or more containers

version Show the Docker version information

wait Block until one or more containers stop, then print their exit codes

### 基础操作步骤

1. 从docker镜像库拉取软件镜像
   1. docker pull postgres
2. 运行docker 镜像
   1. docker run postgres
      1. 如果 postgres 在本地不存在，则会执行1中拉取镜像
      2. 使用 postgres 镜像创建容器，使用默认配置运行postgres
   2. docker run –name pg -e POSTGRES\_PASSWORD=123456 -p 5432:5432 -d postgres
   3. –name 指定运行容器名称
   4. –设置当前容器环境变量
   5. –p 5433:5432,端口映射将容器的5432端口映射到外部机器的5433端口
   6. –d 后台运行
   7. postgres,使用指定的镜像名字
3. 查看正在运行的容器
   1. docker ps
4. 在容器内部连接postgres
   1. docker exec -it pg psql -U postgres -d postgres
   2. exec 在运行容器内部执行命令
   3. –i 即使没有附加也保持STDIN打开
   4. –t 分配一个伪终端
   5. 合起来就是分配一个即使没有附加也保持STDIN打开的pg的伪终端
   6. -U 伪终端传入-U的参数
   7. -d postgres 在后台运行
5. 从容器内部退出连接
   1. exit

### 命令手册

Options:

-f, --file FILE Specify an alternate compose file

(default: docker-compose.yml)

-p, --project-name NAME Specify an alternate project name

(default: directory name)

--verbose Show more output

--log-level LEVEL Set log level (DEBUG, INFO, WARNING, ERROR, CRITICAL)

--no-ansi Do not print ANSI control characters

-v, --version Print version and exit

-H, --host HOST Daemon socket to connect to

--tls Use TLS; implied by --tlsverify

--tlscacert CA\_PATH Trust certs signed only by this CA

--tlscert CLIENT\_CERT\_PATH Path to TLS certificate file

--tlskey TLS\_KEY\_PATH Path to TLS key file

--tlsverify Use TLS and verify the remote

--skip-hostname-check Don't check the daemon's hostname against the

name specified in the client certificate

--project-directory PATH Specify an alternate working directory

(default: the path of the Compose file)

--compatibility If set, Compose will attempt to convert keys

in v3 files to their non-Swarm equivalent

Commands:

build Build or rebuild services

bundle Generate a Docker bundle from the Compose file

config Validate and view the Compose file

create Create services

down Stop and remove containers, networks, images, and volumes

events Receive real time events from containers

exec Execute a command in a running container

help Get help on a command

images List images

kill Kill containers

logs View output from containers

pause Pause services

port Print the public port for a port binding

ps List containers

pull Pull service images

push Push service images

restart Restart services

rm Remove stopped containers

run Run a one-off command

scale Set number of containers for a service

start Start services

stop Stop services

top Display the running processes

unpause Unpause services

up Create and start containers

version Show the Docker-Compose version information

## Docker Compose

### 命令

Options:

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(default: docker-compose.yml)

-p, --project-name NAME Specify an alternate project name

(default: directory name)

--verbose Show more output

--log-level LEVEL Set log level (DEBUG, INFO, WARNING, ERROR, CRITICAL)

--no-ansi Do not print ANSI control characters

-v, --version Print version and exit

-H, --host HOST Daemon socket to connect to

--tls Use TLS; implied by --tlsverify

--tlscacert CA\_PATH Trust certs signed only by this CA

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--skip-hostname-check Don't check the daemon's hostname against the

name specified in the client certificate

--project-directory PATH Specify an alternate working directory

(default: the path of the Compose file)

--compatibility If set, Compose will attempt to convert deploy

keys in v3 files to their non-Swarm equivalent

Commands:

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bundle Generate a Docker bundle from the Compose file

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## Docker Swarm

## Docker Stack