Hands On Docker

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Lights
Camera
Docker

Refresher

1. Docker was launched in 2013. Started in 2008 as a single Python script.

2. Initially it used LXC but current implementation is in golang

3. Images are the standalone, lightweight, executable package of a piece of software. It is basically a set of layers.

4. Containers are instances of images. They're sealed units containing OS, code, and other resources

5. Wanna have a deep insight of Docker?

    a. Linux Containers(LXC)

    b. Cgroups

Before we Begin

1. All systems are up and running

2. Docker is installed

3. Docker Hub account created and logged in(from terminal)

4. Open your terminal and run `docker run hello-world`

5. Get, Set, Go!

Note: Use https://labs.play-with-docker.com in case of any issue with your system

Our First Container

```
docker run -it --rm alpine
```

Our First Container (contd.)

1. `docker ps`

2. `docker logs`

3. `docker attach`

4. `docker run -d --rm alpine ping google.com`

5. `docker ps -l`

6. `docker start -ai <ContainerID>`

Naming your Containers

```
docker run -it --name mycontainer alpine
```

Images

Docker Hub (https://hub.docker.com)

```
1.  docker images
2.  docker pull <ImageName>:<Tag>
3.  docker run -it/-d <ImageName>:<Tag> {<Command>}
```

Let's Run a Webserver

- `docker run -d --name web1 -p 8080:80 nginx:alpine`

- `docker run -d -p 8080:80 -v`

  `~/webserver:/usr/share/nginx/html nginx:alpine`

- `docker run -d -p 8081:80 nginx:alpine`

nGinx Review

https://hub.docker.com/_/nginx/

.....are things going too fast!

Queries? Questions? Wanna share something........

How do I create an Image?

FROM alpine

RUN apk add --no-cache nano

CMD ["/usr/bin/nano", "/tmp/notes"]

$> docker build -t firstimage .

$> docker run --rm -it firstimage

FROM firstImage

ADD notes.txt /notes.txt

CMD ["nano", "/notes.txt"]

$> docker build -t secondImage .

$> docker run --rm -it secondImage

Note: Create a blank file named notes.txt in the same directory

Basic Docker App

git clone https://github.com/shubhamoy/basic_docker_app

docker-compose up

Basic Docker App (contd.)

1. Make changes to the repo.

2. Build your image `docker build -t <username>/<repo_name> .`

3. Dot in the above command isn't a punctuation refers to the current directory

4. Make changes to the docker-compose.yml file

5. `docker-compose up`

Dockerfile Syntax

1. FROM: Base Image to download/use (FROM mhart/alpine-node)
2. MAINTAINER: Author Name (MAINTAINER Shubhamoy <me@shubhamoy.com>
3. RUN: Runs a command (RUN unzip zipfile.zip /srv/)
4. ADD: Adds local/remote files. Check COPY (ADD https://repository.com/package.zip /srv
5. ENV: Sets Environment Variables (ENV DB_HOST=prod.sg-01.cloud.com
6. ENTRYPOINT: Allows us to configure a container that'll run as an executable. Check CMD.
7. EXPOSE: Expose ports
8. VOLUME: Shared or Ephemeral Volumes
9. WORKDIR: Working directory

.dockerignore

Ignore files from being copied to your docker image!

How can I run many containers at once?

Suppose we have an app which depends upon multiple services like *database*, *cache store*, etc. How do we run multiple containers and link them in correct order?

Solution is **docker-compose** which allows us to manage multiple containers using a **docker-compose.yml** file

Better Docker App

git clone https://github.com/shubhamoy/better_docker_app

docker-compose up

Better Docker App (contd.)

1. Make changes to the repo.

2. Build each of your image

   a. `docker build -t <username>/<repo_name>  .`

3. Make changes to the docker-compose.yml file

4. `docker-compose up`

All Good?

Need Review?

Any Queries?

How do I use it in my development?

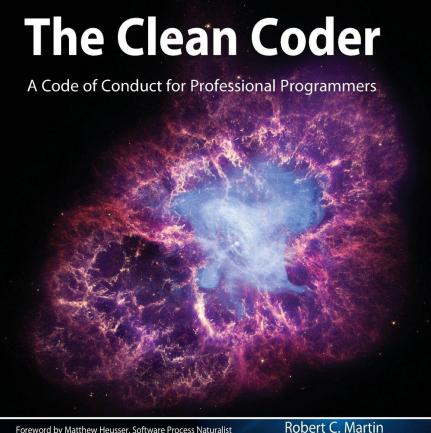Let's see things in action

Review

I want to learn more!

http://container.training/

by

Jérôme Petazzoni

Know Something About You

https://16personalities.com

Thanks

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