

docker

Introduction to Docker

@botchagalupe

- a.k.a. John Willis
- 35 Years in IT Operations
- Exxon, Canonical, Chef, Enstratus, Socketplane
- Devopsdays Core Organizer

Agenda

- Why Docker?
- Docker Platform
- Docker Installation
- Docker Workflow(s)

Docker Blog



docker

What is Docker?

Use Cases

Try It!

Install & Docs

Bro

March 18, 2015

DOCKER TUTORIAL 1 – INSTALLING DOCKER

This is a casual tutorial series. We will start out first with very simple sessions on how to [install Docker](#) and use the docker run command, in future videos we will hit more advanced topics.

This first video talks a little bit about releases in Docker and the current release cadence. We also show examples of installing from default repo's on Ubuntu, Centos and Fedora as well as installs from [get.docker.com](#) and installing from the Docker binary.



Why Docker?

- Isolation
- Lightweight
- Simplicity
- Workflow
- Community

Docker Community

- 1200 Docker Contributors
- 100,000 Dockerized Applications
- 3 to 4 Million Developers using Docker
- 300 Million Downloads
- 32,000 Docker Related Projects
- 70% of enterprises are using Docker

Docker Engine
+ Docker Hub

= Docker Platform

Docker Engine

- Docker Daemon
- Docker CLI

Docker Daemon

- Builds Images
- Runs and Manages Containers
- RESTful API

Docker CLI

- `docker build` # Build an image from a Dockerfile
- `docker images` # List all images on a Docker host
- `docker run` # Run an image
- `docker ps` # List all running and stopped instances
- `docker stop` # Stop a running instances
- `docker rm` # Remove an instance
- `docker rmi` # Remove an image

Docker Architecture

Docker Client

`docker pull`
`docker run`
`docker ...`



Host

Docker Daemon

Container 1

Container 2

Container 3

Container ...


Docker Hub

- Provides Docker Services
- Library of public images
- Storage for your images
 - free for public images
 - cost for private images
- Automated builds(link github/bitbucket repo; trigger build on commit)


Docker Hub

Browser tabs: Read Later, San Diego Ukulele, http://10.254.101..., https://hub.docker.com

https://hub.docker.com

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Build better apps


Browse, host, share and manage apps and access within your team.

Deploy apps faster

Automate and integrate your app development workflows.

Get the latest news

Subscribe to the Docker newsletter and get the latest updates.

☒ Yes I want the weekly newsletter!
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Docker Installation

Install Latest

Use (for latest)

```
wget -qO- https://get.docker.com/ | sh
```

Pre release

```
wget -qO- https://test.docker.com/ | sh
```

On UBUNTU 14-10

Repo install usually back leveled

```
sudo apt-get install -y docker.io  
sudo service docker restart
```

On RHEL/Centos/Fedora

Repo install usually back leveled

```
sudo yum install docker  
sudo service docker start
```

Docker Installation

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Docker Platform Workflow

- Find an Image on Docker Hub
- Pull an Image from Docker Hub
- Run an Image on Docker Host
- Stop an Instance
- Remove an Instance
- Remove an Image

Docker Workflow (Part 1)

```
docker search ubuntu  
docker search -s 10 ubuntu
```

```
docker pull ubuntu  
docker images
```

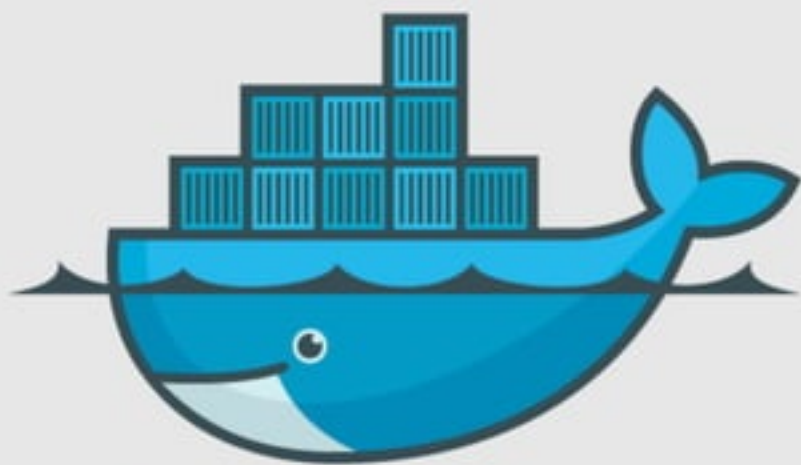
```
docker history ubuntu
```

```
cid=$(docker run -itd ubuntu)  
echo $cid  
docker ps
```

```
docker exec $cid ip a
```

```
docker stop $cid  
docker rm $cid
```

```
docker rmi ubuntu  
docker images
```



docker

Demo

Docker Run Commands

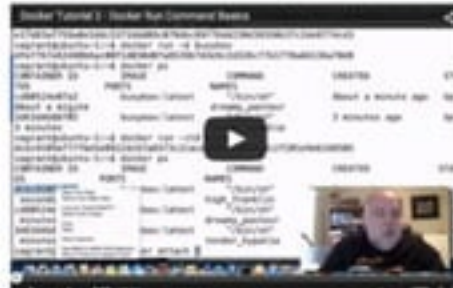


March 26, 2019

DOCKER TUTORIAL 2 – DOCKER RUN COMMAND BASICS

This is a casual Docker tutorial series. We will start out first with very simple sessions on how to install and use the docker run command. In future videos we will hit more advanced topics.

In this second video we explore some of the simple tags of the docker command. This is another basic tutorial. This time we explore the difference between some of the run tags (e.g., -d vs -t). We also explore the use of the docker ps commands while working with running and stopped containers.



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April 6, 2019

DOCKER TUTORIAL 4 – MORE RUN WITH A COUPLE OF EXTRA GOODIES

This is a casual Docker tutorial series. We started out first with very simple sessions on how to install Docker, the docker run command and had fun with volumes. In future videos we will hit more advanced topics.



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ubuntu ubuntu



Docker Platform Workflow (Build Images)

- Build a Local Image
- Run an Image on Docker Host

Docker Workflow (Part 2)

```
FROM ubuntu:14.04
```

```
RUN \  
    apt-get update && \  
    apt-get -y install apache2
```

```
ADD index.html /var/www/html/index.html
```

```
EXPOSE 80
```

```
CMD ["/usr/sbin/apache2ctl", "-D", "FOREGROUND"]
```

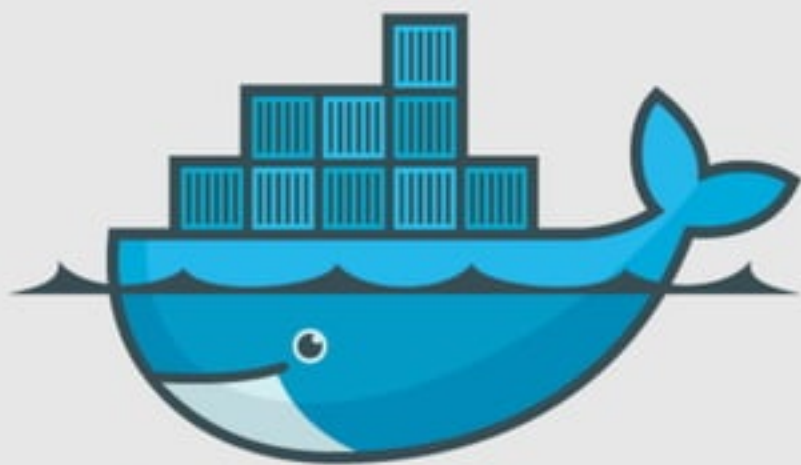
```
<h1>Docker Rocks!</h1>
```

```
docker build -t apache-test .
```

```
cid=$(docker run -itd -P apache-test)
```

```
nid=$(docker inspect --format '{{.NetworkSettings.IPAddress}}' $cid)
```

```
curl $nid
```



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Demo

Docker Build

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April 22, 2018

DOCKER TUTORIAL 6 – DOCKERFILE (PART 1)

This is a casual [Docker tutorial series](#). We started out first with very simple sessions on how to install and use the docker run command. In future videos we will hit more advanced topics.

In this sixth video we cover the basics of a Dockerfile. We cover basic commands such as FROM, RUN and CMD along with other basic Dockerfile commands. Basically the tutorial describes the Dockerfile DSL.

[illegible]

Authoritarianism

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April 30, 2019

DOCKER TUTORIAL 7 – DOCKERFILE (PART 2)

This is a casual [Docker tutorial series](#). We started out first with very simple sessions on how to install and use the docker run command. In future videos we will hit more advanced topics.

[illegible]

In this seventh video we cover more advanced uses of building images with Dockerfiles. We will look at a couple of the [Docker Hub](#) repos as different examples to create Apache images.

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Tach

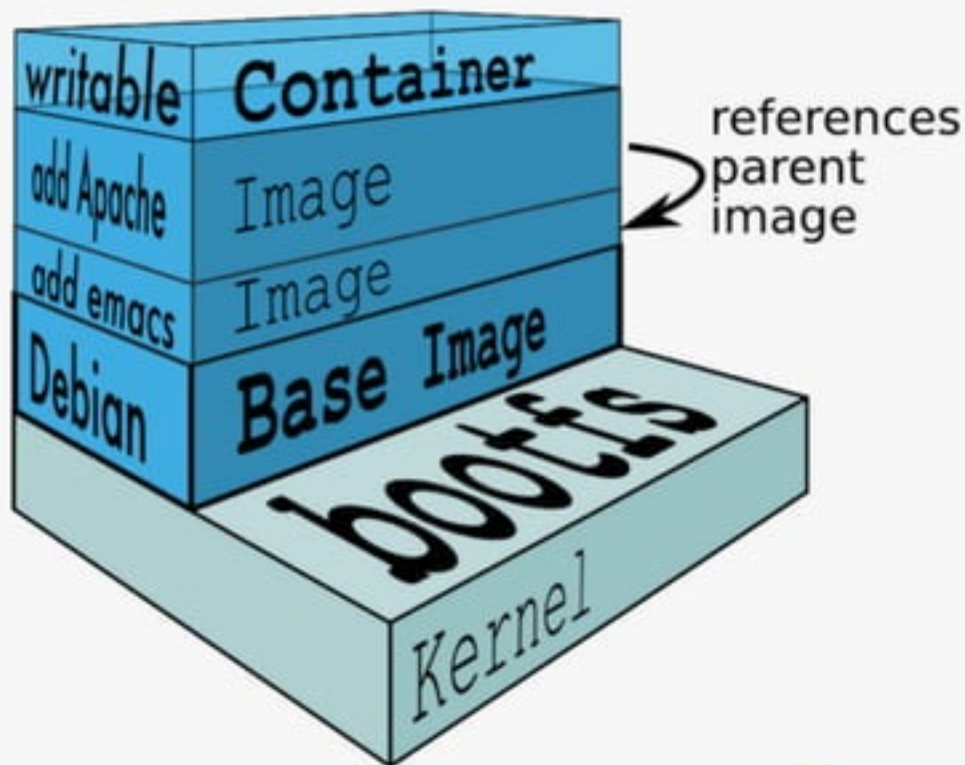
api and community conference
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...the elements of systems, you. Finally

[illegible]

Docker Platform Workflow (Volumes)

- Using Volumes
- Mounting Docker Host Volumes

Docker Platform Workflow (Volumes)



Docker Workflow (Part 3)

```
docker run -it --name testjob1 -v /tmp1 ubuntu  
mkdir test  
cd test  
touch file1  
touch file2
```

```
docker stop testjob1  
docker start testjob1
```

```
docker exec testjob1 ls /test
```

```
docker run -it --name testjob2 -v /tmp1 ubuntu  
docker exec testjob2 ls /test
```

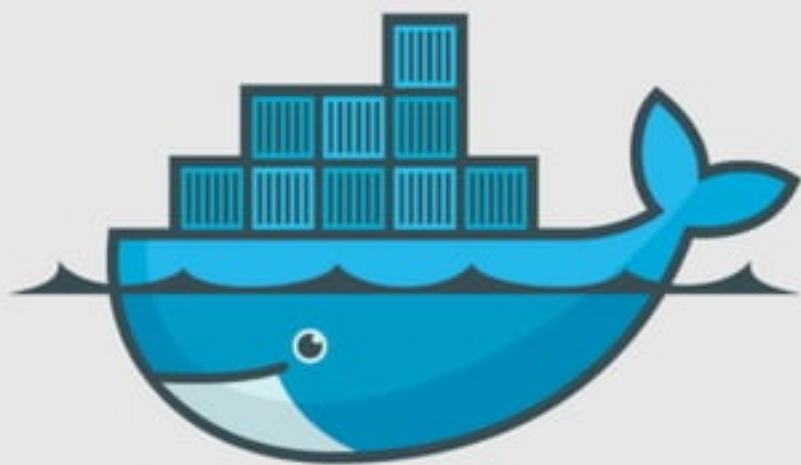
```
docker run -itd --name testjob3 -v $(pwd)/index.html:/var/www/html/index.html apache-test
```

```
nid=$(docker inspect --format '{{.NetworkSettings.IPAddress}}' testjob3)
```

```
curl $nid
```

(Change the index.html file

```
curl $nid
```



docker

Demo

Docker Volumes

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April 1, 2015

DOCKER TUTORIAL 3 – FUN WITH VOLUMES

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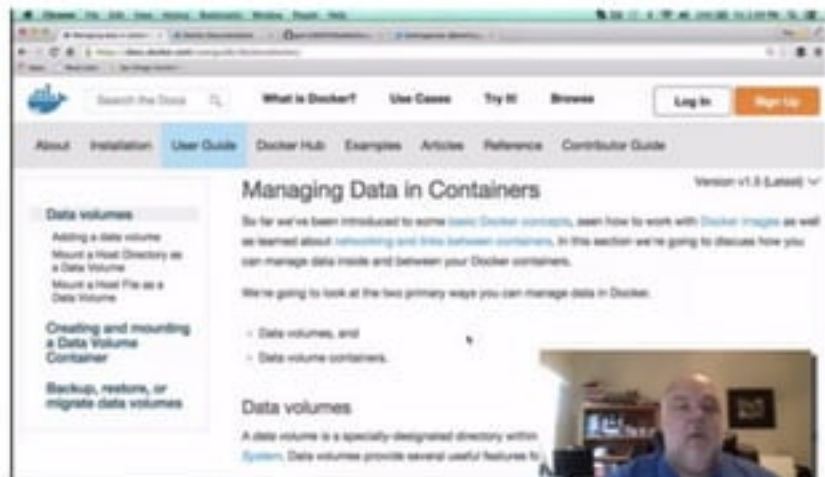
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References

WHY I LOVE DOCKER... AND WHY YOU'LL LOVE IT TOO

<https://blog.docker.com/2015/03/why-i-love-docker-and-why-youll-love-it-too/>

DOCKER TUTORIAL 1 – INSTALLING DOCKER

<https://blog.docker.com/2015/03/docker-tutorial-1-installing-docker/>

DOCKER TUTORIAL 2 – DOCKER RUN COMMAND BASICS

<https://blog.docker.com/2015/03/docker-tutorial-2-docker-run-command-basics/>

DOCKER TUTORIAL 3 – FUN WITH VOLUMES

<https://blog.docker.com/2015/04/docker-tutorial-3-fun-with-volumes/>

DOCKER TUTORIAL 4 – MORE RUN WITH A COUPLE OF EXTRA GOODIES

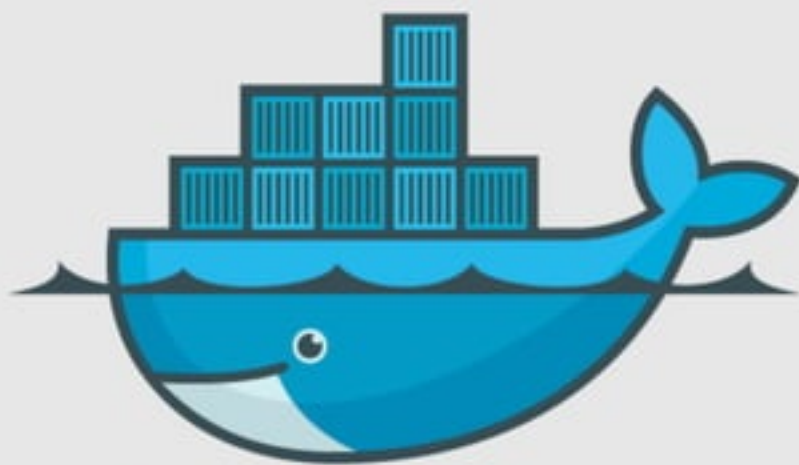
<https://blog.docker.com/2015/04/docker-tutorial-4-more-run-with-a-couple-of-extra-goodies/>

DOCKER TUTORIAL 6 – DOCKERFILE (PART 1)

<https://blog.docker.com/2015/04/docker-tutorial-6-dockerfile-part-1/>

DOCKER TUTORIAL 7 – DOCKERFILE (PART 2)

<https://blog.docker.com/2015/04/docker-tutorial-7-dockerfile-part-2/>



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