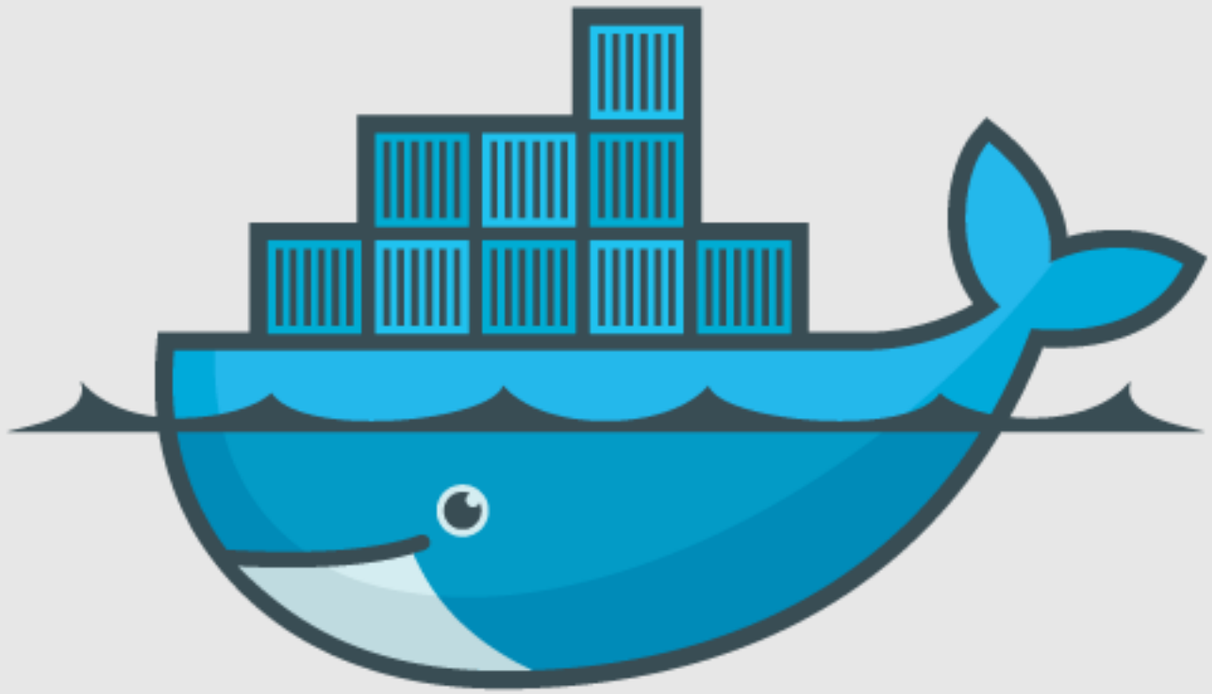


Introduction to Docker

@botchagalupe

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

Agenda

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

Docker Blog

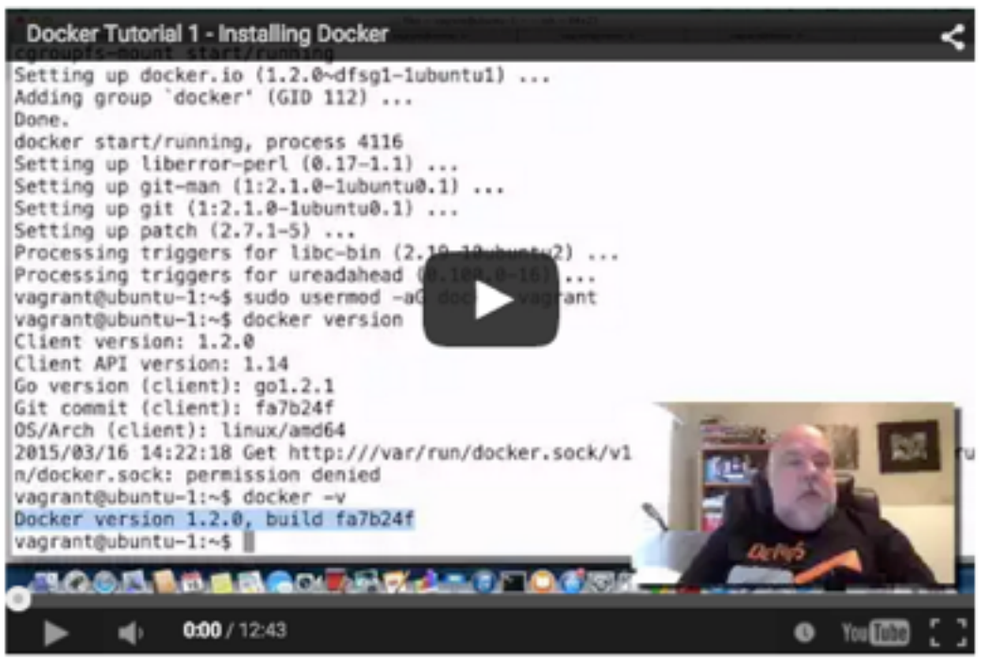
docker What is Docker? Use Cases Try It! Install & Docs Bro

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

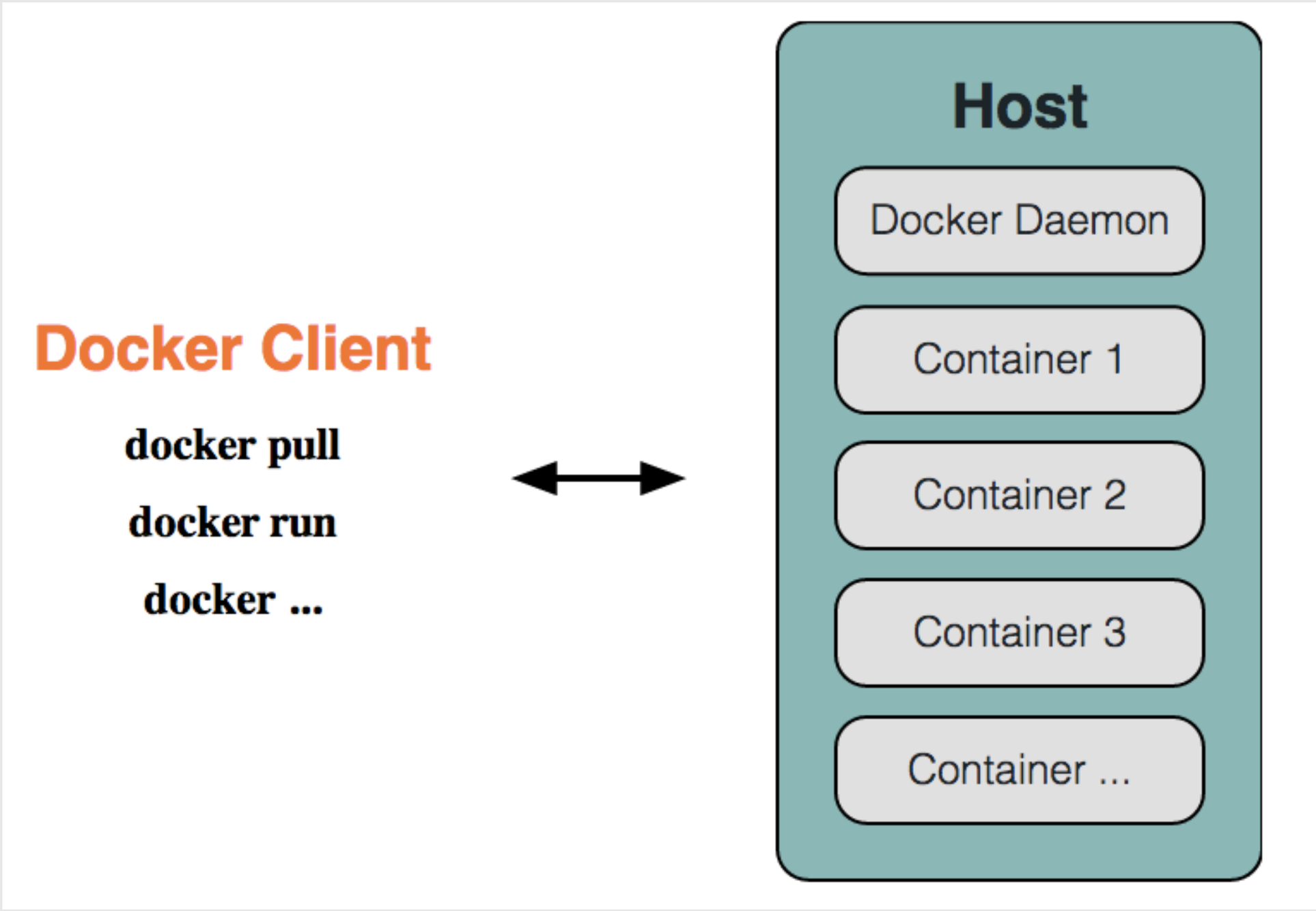
Docker Daemon

- 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 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

https://hub.docker.com
Read Later
San Diego Ukulele
http://10.254.101.2
https://hub.docker.
docker
Browse & Search
Log In
Join Docker Hub and be part of the community
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
Subscribes to the Docker newsletter and get the latest updates
Username
Password
Email Address
Yes! I want the weekly newsletter!
Sign up
Sign up with Github

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
```

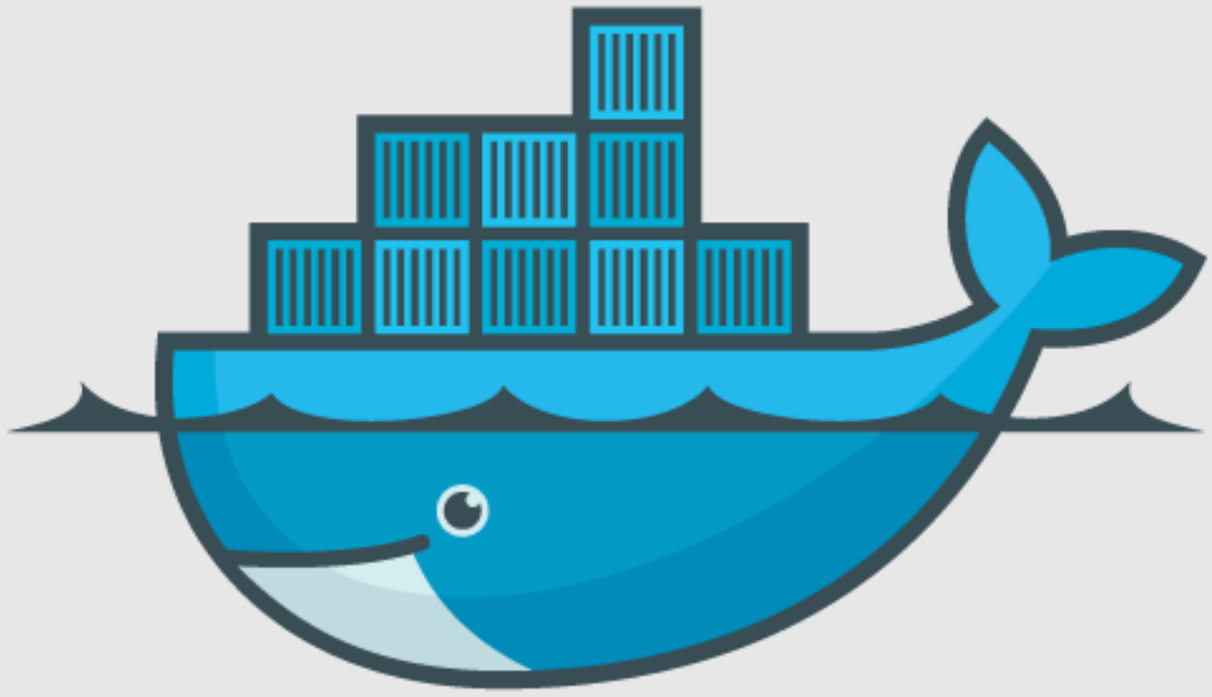
Docker Installation

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

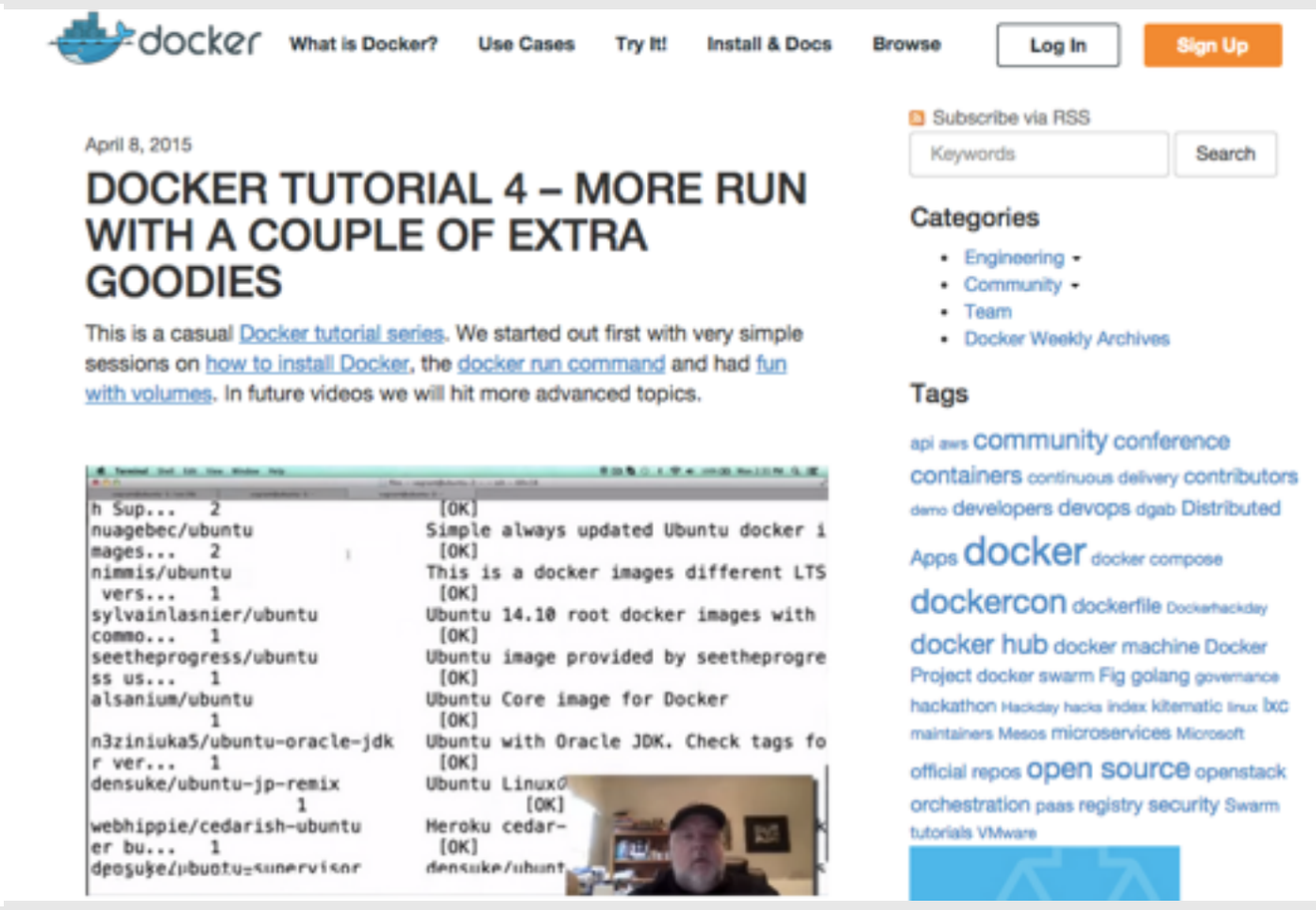
Docker Workflow (Part 1)

```
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
```



Demo

Docker Run Commands



Docker Platform Workflow (Build Images)

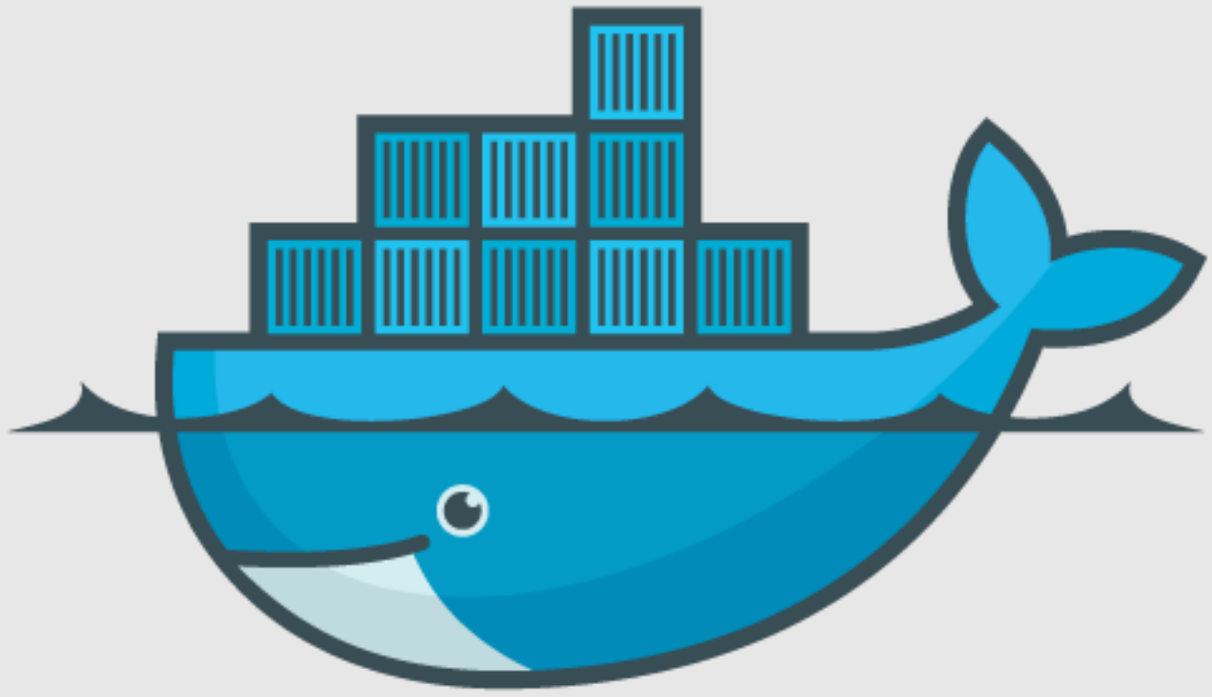
- Build a Local Image
- Run an Image on Docker Host

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"]
```

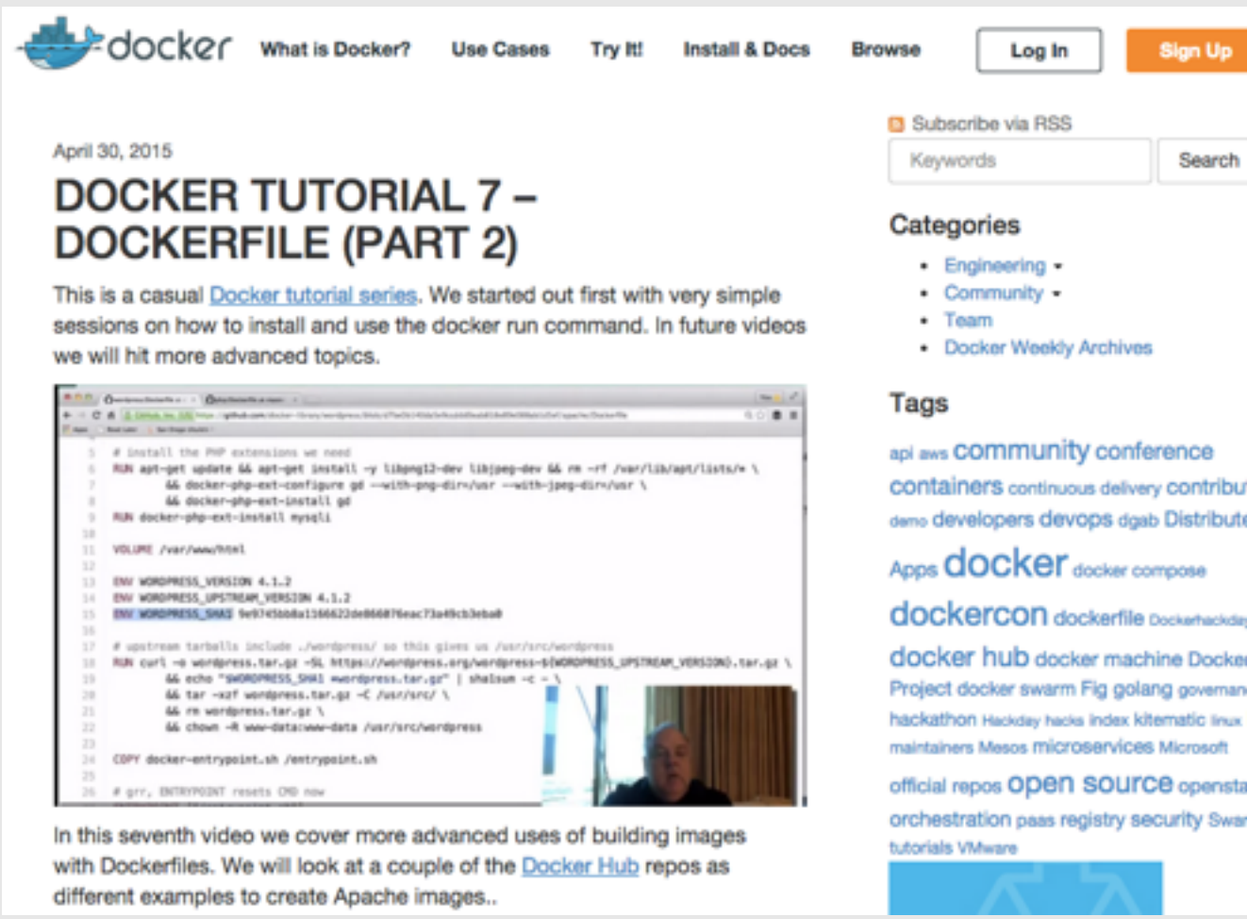
```
<h1>Docker Rocks!</h1>
```

```
docker build -t apache-test .

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

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

curl $nid
```



Demo

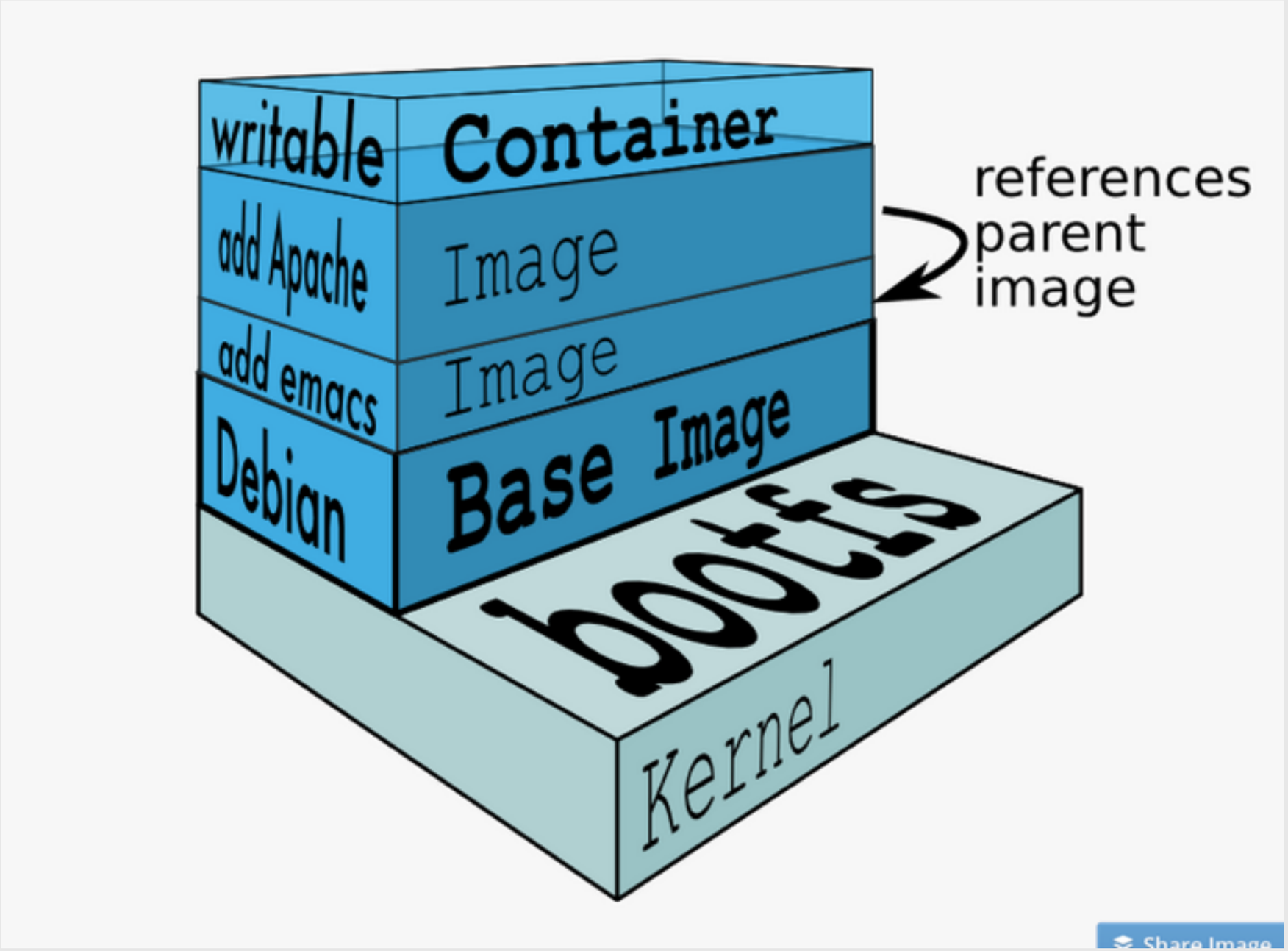
Docker Build



Docker Platform Workflow (Volumes)

- Using Volumes
- Mounting Docker Host Volumes

Docker Platform Workflow (Volumes)

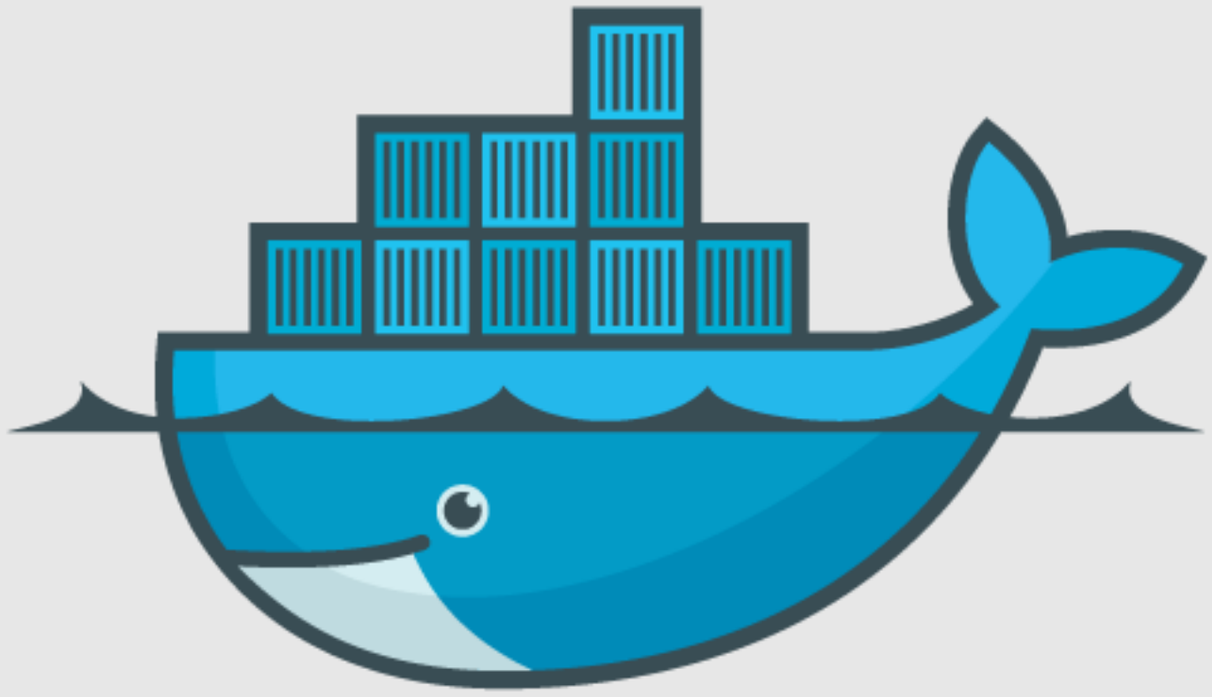


Docker Workflow (Part 3)

```
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
```



Demo

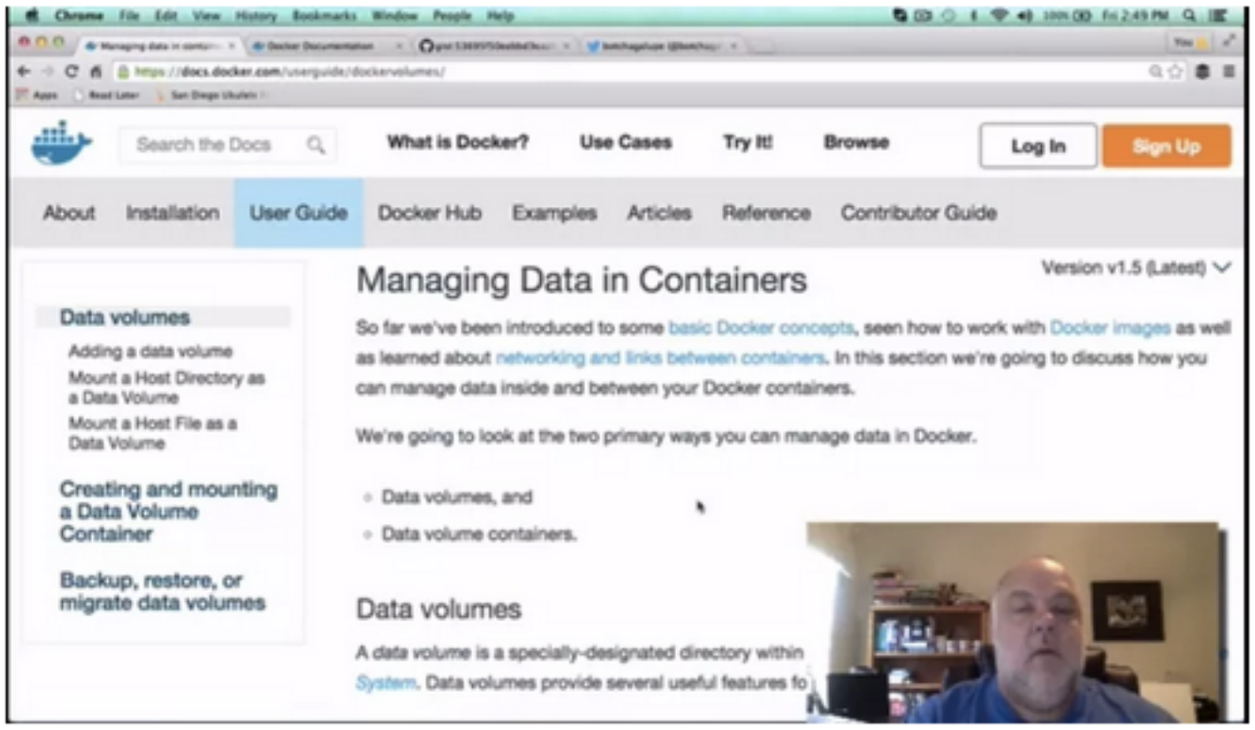
Docker Volumes

docker What is Docker? Use Cases Try It! Install & Docs Browse Log In Sign Up

April 1, 2015

DOCKER TUTORIAL 3 – FUN WITH VOLUMES

This is a casual Docker tutorial series. We started 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.



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References

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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
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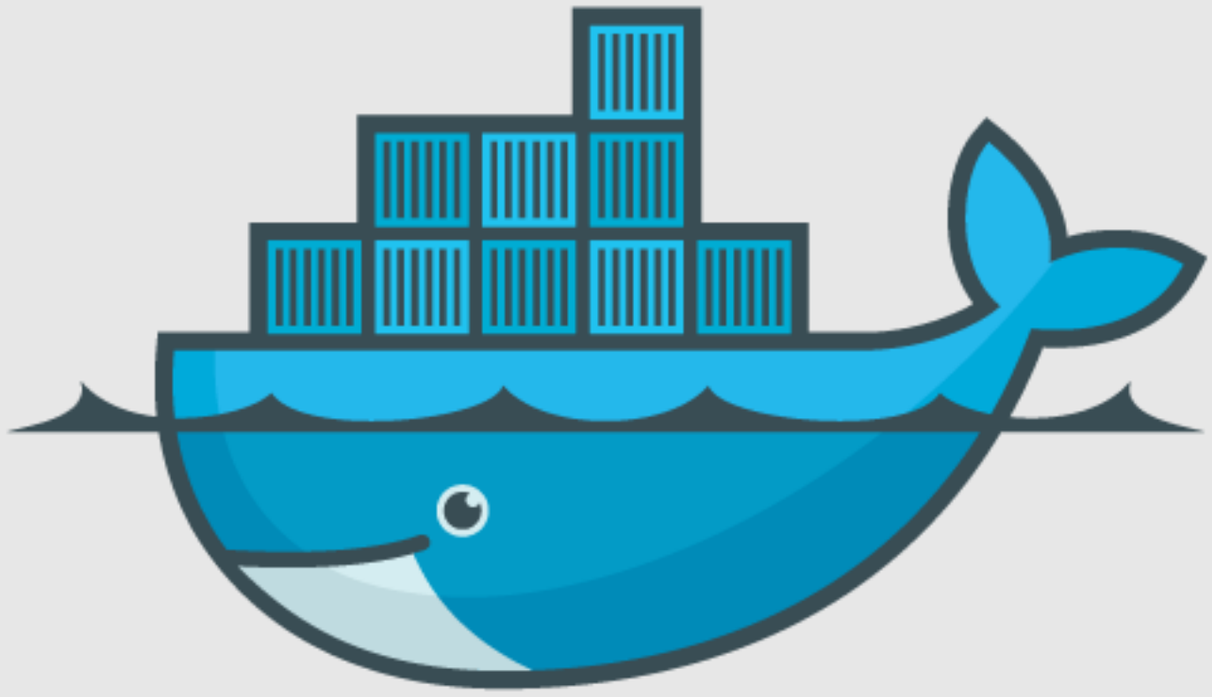
DOCKER TUTORIAL 3 – FUN WITH VOLUMES
https://blog.docker.com/2015/04/docker-tutorial-3-fun-with-volumes/

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/



docker

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