

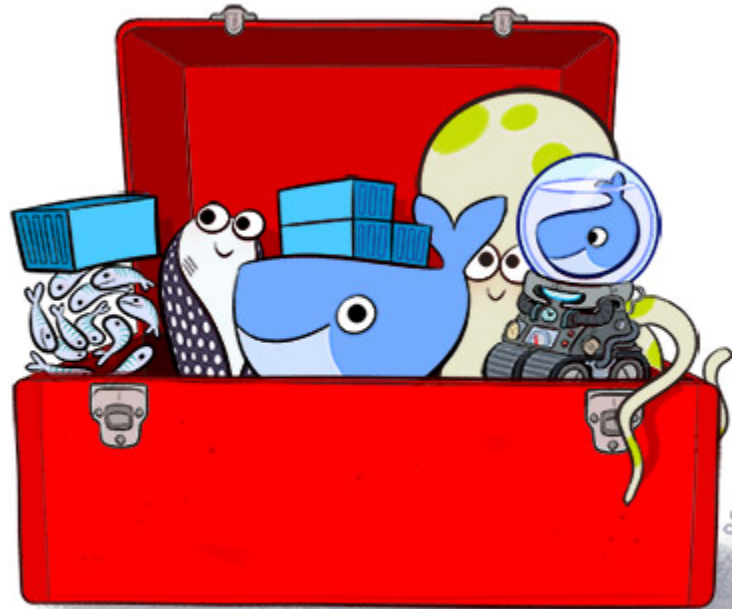
# DOCKER

## INTRODUCTION FOR THE BUSY DEVELOPER



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Grab it here: <https://www.docker.com/docker-toolbox>



# CONTAINERS, IMAGES, REGISTRIES

- Registries: provide images
- Images: binary templates for containers
- Container: an instance of an image

# BASIC STUFF

```
$ docker-machine start default  
$ eval "$(docker-machine env default)"  
$ docker run hello-world
```

# BREAKING YOUR SYSTEM

```
$ docker run -ti ubuntu /bin/bash
root@32b5e993aa27:/usr# cd /bin
root@32b5e993aa27:/bin# ls
bash      bzip2recover  dash

root@32b5e993aa27:/bin# rm -fr *
root@32b5e993aa27:/bin# ls
bash: /bin/ls: No such file or directory
$ docker rm 32b5e993aa27
```

# PLAYING WITH CONTAINERS

```
$ docker ps -a
$ docker run -ti --name myubuntu ubuntu /bin/bash
root@44998caf130c:/# exit

$ docker ps -a

$ docker inspect myubuntu

$ docker start myubuntu
$ docker attach myubuntu
```

# EXPLORING THE CONTAINER

```
$ docker ps -a
$ docker run -ti --name myubuntu ubuntu /bin/bash
root@44998caf130c:/# exit

$ docker ps -a
$ docker inspect myubuntu
$ docker start myubuntu
$ docker attach myubuntu
root@44998caf130c:/# cat /etc/hosts
```

# RUNNING TWITTER IN NGINX

```
$ docker run --name myweb -v $HOME/content:/usr/share/nginx/html:ro \  
-p 8080:80 -d nginx
```

```
$ cd $HOME/content  
$ wget http://twitter.com  
--2015-11-26 18:41:22-- http://twitter.com/  
...  
$ cd -
```

```
$ docker-machine ip default  
192.168.99.100  
$ open http://$(docker-machine ip default):8080  
$ docker logs myweb
```



# LINKING CONTAINERS

```
$ docker run --name oneweb -v $HOME/content:/usr/share/nginx/html:ro \
  -p 8080:80 -d nginx
```

```
$ docker run -ti --link oneweb --name myubuntu \
  --volumes-from oneweb ubuntu /bin/bash
```

```
root@12d9f8b3920f:/# cat /etc/hosts
```

```
...
```

```
172.17.0.2          oneweb e5711a2afc6d
```

```
root@a6e7ac720e5d:/# ls /usr/share/nginx/html/
index.html  stuff.html
```

# BUILDING AN IMAGE

```
$ ls  
Dockerfile  
  
$ docker build -t koenighotze/demoimage .
```

# DOCKERFILE - JDK9

Full example <http://git.io/vBKLS>

```
FROM ubuntu:15.04
MAINTAINER David Schmitz <koenighotze@yahoo.com>

RUN apt-get -qq update
RUN apt-get -y install curl wget
```

# INSTALLING TOOLS

```
WORKDIR /tmp/

RUN wget --no-check-certificate --no-cookies \
  --header "Cookie: oraclelicense=accept-securebackup-cookie" \
  http://www.java.net/download/jdk9/archive/b85/binaries/jdk.tar.gz
RUN tar xvzf jdk-9-ea-bin-b85-linux-x64-08_oct_2015.tar.gz && \
  rm jdk-9-ea-bin-b85-linux-x64-08_oct_2015.tar.gz
RUN mv jdk1.9.0 /usr/local/

ENV PATH /usr/local/jdk1.9.0/bin:$PATH
```

# EXPOSING VOLUMES AND RUNNING COMMANDS

```
# setup volume for external sources
RUN mkdir -p /home/java/share
ENV SRC_VOLUME /home/java/share
VOLUME [$SRC_VOLUME]

CMD ["java", "-version"]
```

# DOCKERFILE - JEE EXAMPLE

```
$ cat Dockerfile
FROM jboss/wildfly
MAINTAINER Koenig Hotze
ENV REFRESHED_AT 20151107

RUN /opt/jboss/wildfly/bin/add-user.sh admin geheim123 --silent

ADD guest-1.0-SNAPSHOT.war /opt/jboss/wildfly/standalone/deployments/

CMD ["/opt/jboss/wildfly/bin/standalone.sh", "-c", \
    "standalone-full.xml", "-b", "0.0.0.0", \
    "-bmanagement", "0.0.0.0"]
```

# DOCKER + MAVEN

Full example <http://git.io/vBKLk>

```
<plugin>
  <groupId>com.spotify</groupId>
  <artifactId>docker-maven-plugin</artifactId>
  <version>0.3.6</version>
  <executions>
    <execution>
      <phase>package</phase>
      <goals>
        <goal>build</goal>
      </goals>
    </execution>
  </executions>

  <configuration>
    ...
  </configuration>
</plugin>
```

# DOCKER + MAVEN

```
<configuration>
  <imageName>koenighotze/jee7hotelguest</imageName>
  <dockerDirectory>src/docker</dockerDirectory>
  <resources>
    <resource>
      <targetPath>/</targetPath>
      <directory>${project.build.directory}</directory>
      <include>${project.build.finalName}.war</include>
    </resource>
  </resources>
</configuration>
```



# DOCKER-COMPOSE

Full example <http://git.io/vBKI9>

```
$ cat docker-compose.yml

booking:
  image: koenighotze/jee7hotelbooking
  ports:
    - 8082:8080
    - 9992:9990
...
portal:
  image: koenighotze/jee7hotelportal
  environment:
    DOCKER_MACHINE_IP: $(docker-machine ip default)
  ports:
    - 9995:9990
    - 80:8080
```

# RUNNING DOCKER-COMPOSE

```
$ docker-compose up  
$ open http://$(docker-ip)
```

# ONLINE RESOURCES

Try one of these great vaults of wisdom:

- [Docker Homepage](#)
- [Docker Cheatsheet](#)
- [James Turnbull, Docker Book](#)

# THANK YOU!

Questions? Feedback?

David Schmitz / [@koenighotze](#)