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**Just a light
weight VM?**

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This is a VM



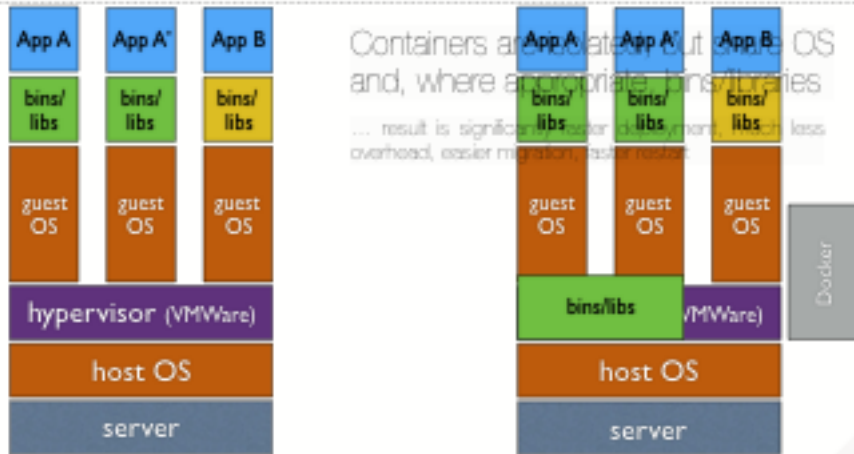
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And these are containers



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Architectural differences



Containers are created out of the OS and, where appropriate, binaries ... result is significant overhead, easier migration, faster restart.

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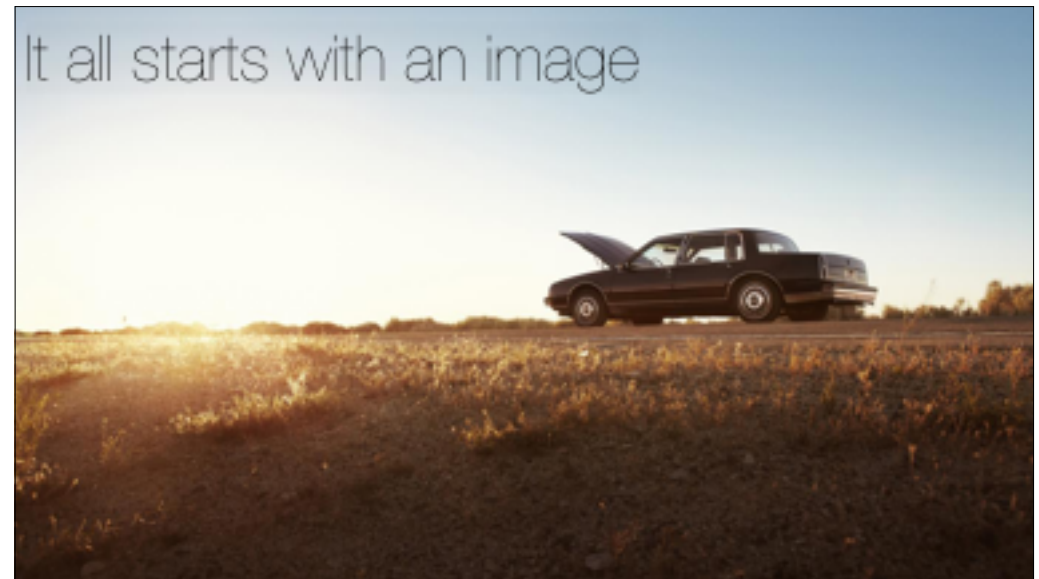
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Software
Delivery
Platform



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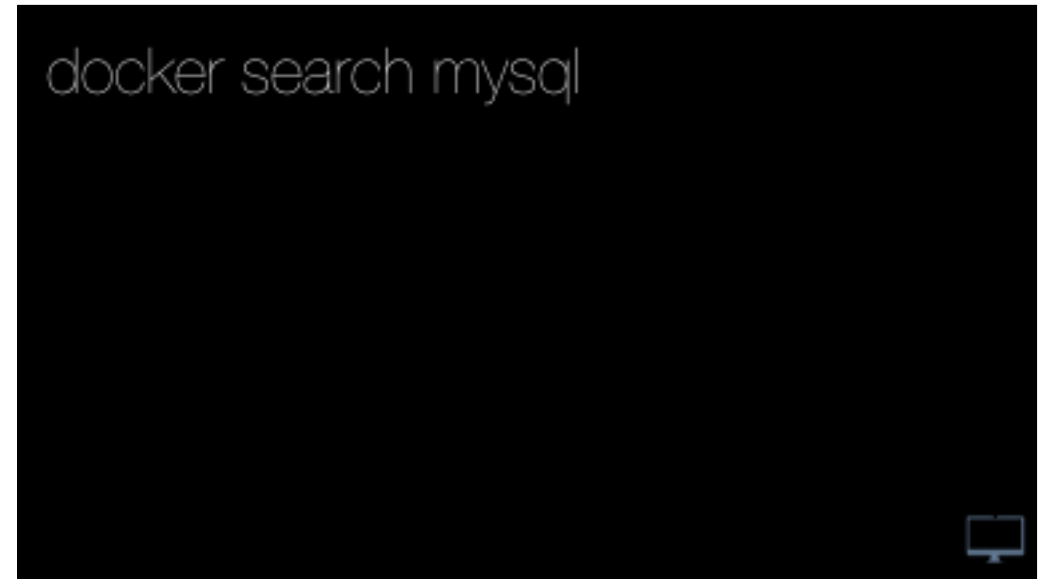
It all starts with an image



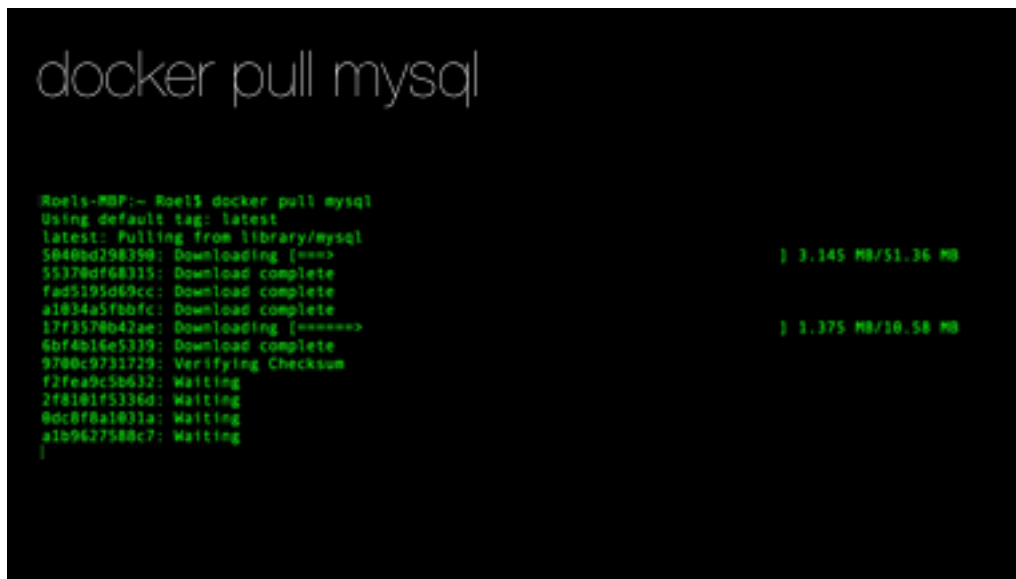
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docker image

- A filesystem and parameters to use it at runtime (dockerfile)
- It doesn't have state
- All layers are readonly
- Layers are shared between images
- Update requires just a download of the new layer
- "docker commit" to "save" changes,
 - add a new layer
 - create a newer image

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docker images

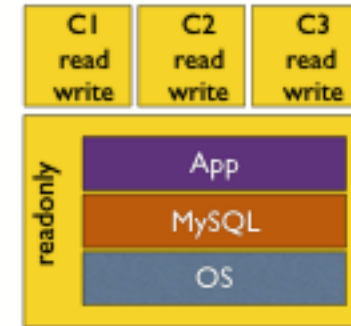
```
Roels-MBP:~ Roel$ docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
mysql               latest             7666f75adb6b      4 weeks ago       406 MB
ubuntu              latest             f49eec89601e      5 weeks ago       129 MB
hello-world         latest             48b5124b2768      6 weeks ago       1.84 kB
apex51/ords309     latest             f12e8d7f48bb      8 weeks ago       12.7 GB
mikegcoleman/catweb latest             c1c531094196      6 months ago      58.7 MB
```



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docker container

- A (running) instance of an image
- Adds a read/write layer on top of the image
- Image is not cloned
- Spin up dozens of containers



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docker run hello-world



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docker run -it ubuntu

-i : interactive
-t : tty



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```
docker run
-d
-p 5000:5000
--name catweb
mikegcoleman/catweb
```

-d : detach
-p : port forwarding
-- name

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```
docker ps
```

```
Roels-MBP:~ Roels$ docker ps
CONTAINER ID        IMAGE               COMMAND                  CREATED             STATUS              PORTS
67432b15c9d7       mikegcoleman/catweb  "python /usr/src/a..." 3 minutes ago      Up 3 minutes       0.0.0.0:5000->
08001/tcp
678367d0942b       412e8d77480b       "/entrypoint.sh"        8 weeks ago        Up 7 days           0.0.0.0:1521->
1521/tcp, 0.0.0.0:8080->8080/tcp, 8081/tcp, 0.0.0.0:49160->22/tcp
apex51
```

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```
docker container stop [id]
docker container start [id]
docker container attach [id]
```

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```
recap ....
```

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```
docker search [something]
docker pull [image]
docker images
docker run [image]
docker container stop / start / attach
docker ps
```

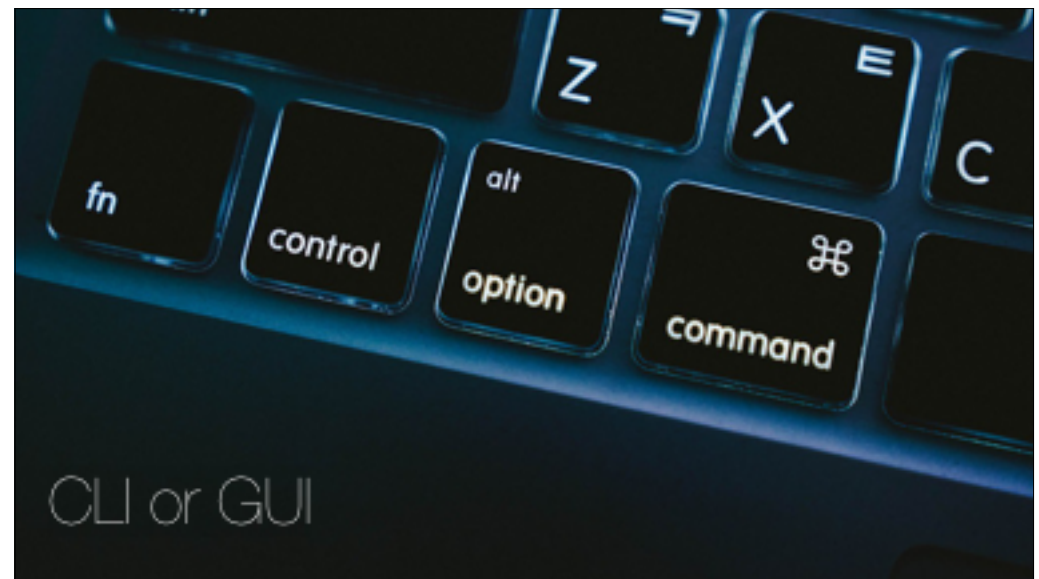
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```
docker run
-it
-v /Users/Roel/docker/ubuntu:/tmp
ubuntu
```

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docker search apex

```

Roel@MSP-docker: Roel$ docker search apex
NAME                                DESCRIPTION                                STARS    OFFICIAL    AUTOMATED
arackowski/oracle-apex-ords         Oracle Express Edition 11g Release 2 on Ub... 38        [OK]
sath88/apex                         Apex 5.0.2 upgrade package for sath88/orac... 6         [OK]
lucassampoduz/orac_apex            Oracle RDT Data Service and APEX Images P... 4         [OK]
chrisways/apex                    Apache Apex Test Sample                  2         [OK]
j188r/aww-apex                     AWS CLI with apex and awscli            2         [OK]
apettit/docker-oracle12c-apex5     Oracle database 11c Release 1 with Apex 5... 2         [OK]
apettit/ubuntu-was-liberty-8.5.5-jdk8  Oracle Image with IBM Liberty 8.5.5.00 jdk... 1
verticleio/apex-petclinic          Spring Petclinic Application with APEX Cal... 1
redventures/apex-aws               Container with the latest version of aws C... 0
payfit/apex                        tomcat8 + apex 4.2.4                    0
dgiysoft/apex                      tomcat8 + apex 4.2.4                    0
rdbell/apex                        Docker for ApexDoc                       0         [OK]
dancwilliams/apexdoc              Docker for ApexDoc                       0         [OK]
apettit/ubuntu-oracle-jdk8-tomcat8  This build is created from the Dockerfile ... 0         [OK]
apettit/ubuntu-oracle-jdk8-tomcat9  Built from ubuntu-oracle-jdk8-tomcat9 rep... 0         [OK]
apettit/docker-ghost               Training repo ubuntu to Ghost            0         [OK]
sgraps/oracle-apex-ords            Oracle 11g R2 with APEX 5                0
rdbell/apex-go                     Dockerize http://apex.run                0         [OK]
jwattco/apex-lambda               Dockerize http://apex.run                0         [OK]
codeclimate/toccli/late-apex      Dockerize http://apex.run                0         [OK]
kammenberg/s3bucket-pipeline-apex  Dockerfiles to aid in deploying and build... 0         [OK]
poldt/apex-docker                  Dockerfiles to aid in deploying and build... 0         [OK]
thattai/oracle-apex                Dockerize http://apex.run                0         [OK]
newguilambda-apex                 Dockerize http://apex.run                0         [OK]
cooperharbo/apex-deco-web          Dockerize http://apex.run                0         [OK]
Roel@MSP-docker: Roel$
    
```

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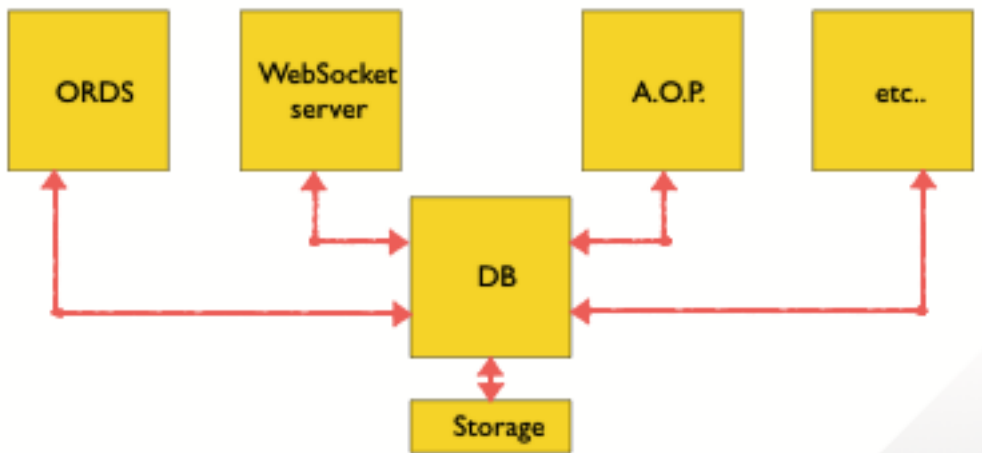
docker run

```

-d
--name apex51
-p 49160:22 -p 8080:8080 -p 1521:1521
-v /Users/Roel/docker:/tomcat/webapps/i/host
arackowski/oracle-apex-ords
    
```

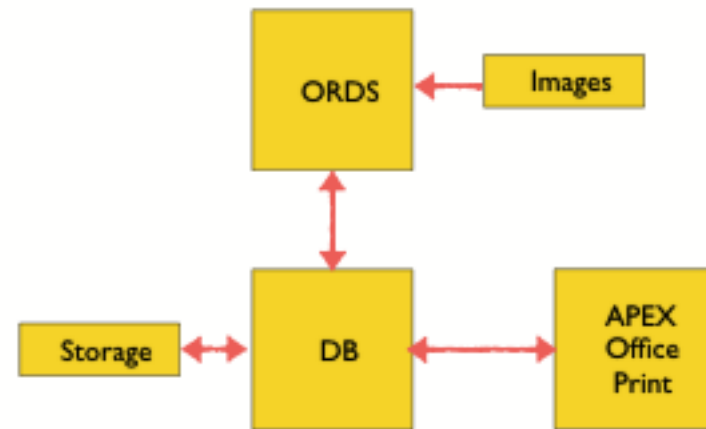
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APEX & Docker - Multiple containers



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Database & ORDS & AOP in Docker



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```
docker network create my_network
```

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```
docker network  
connect my_network  
oracle
```

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```
docker run -t -i \  
--name ords \  
--network=my_network \  
-e DATABASE_HOSTNAME="oracle" \  
-e DATABASE_PORT="1521" \  
-e DATABASE_SERVICE_NAME="ORCLPDB1" \  
-e DATABASE_PUBLIC_USER_PASS=oracle \  
-e APEX_LISTENER_PASS=oracle \  
-e APEX_REST_PASS=oracle \  
-e ORDS_PASS=oracle \  
--volume /Users/Roel/docker/apex/images:/usr/local/tomcat/webapps/1  
-p 8181:8080  
lucassampsouza/ords_apex:3.0.9
```

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```
docker compose
```



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docker swarm



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Docker take aways

- Perfect for creating independent building blocks for your app
- Perfect for simple software delivery
- Invest some time to get acquainted with the architecture
- Ideal replacement of your local development VM
- Oracle's support is growing

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Q & A

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