using docker

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Example search (for tomcat) images on Docker Hub

```
docker search tomcat
```

Download image

without starting the container. example with Wordpress image.

```
docker pull wordpress
```

See local (downloaded) images

```
docker images
```

```
NAME DESCRIPTION STARS OFFICIAL AUTOMATED
tomcat Apache Tomcat is an open source implementati… 2701 [OK]
tomee Apache TomEE is an all-Apache Java EE certif… 77 [OK]
dordoka/tomcat Ubuntu 14.04, Oracle JDK 8 and Tomcat 8 base… 53 [OK]
bitnami/tomcat Bitnami Tomcat Docker Image 31 [OK]
kubeguide/tomcat-app Tomcat image for Chapter 1 28
consol/tomcat-7.0 Tomcat 7.0.57, 8080, "admin/admin" 17 [OK]
cloudesire/tomcat Tomcat server, 6/7/8 15 [OK]
aallam/tomcat-mysql Debian, Oracle JDK, Tomcat & MySQL 12 [OK]
arm32v7/tomcat Apache Tomcat is an open source implementati… 10
rightctrl/tomcat CentOS , Oracle Java, tomcat application ssl… 6 [OK]
maluuba/tomcat7-java8 Tomcat7 with java8. 4


...
```

```
REPOSITORY TAG IMAGE ID CREATED SIZE
wordpress php7.4-fpm-alpine 78ac3963ff95 2 weeks ago 201MB
amazonlinux latest cd2d92bc1c0c 2 weeks ago 163MB
php 7.4-fpm-alpine 0e798217e66f 3 weeks ago 81.4MB
```

See running images

```
docker ps
```

Run container example

Interactive mode start

of tomcat with mapping port 8080 of container to 8080 on server

```
docker run -it -p 8080:8080 tomcat
```

Background start

```
docker run -d 8080:8080 tomcat
```

Delete images

work if no running containers on that image

```
docker rmi wordpress
```

Create Custom docker image using Dockerfile

```
vi Dockerfile
```

Dockerfile

```
FROM amazonlinux

RUN yum -y update
RUN yum -y install httpd
RUN yum -y install php

COPY ./index.php /var/www/html/index.php

CMD ["/usr/sbin/httpd", "-D", "FOREGROUND"]

EXPOSE 80
```

index.php

```
<?php phpinfo(); ?>
```

Build an image

using Dockerfile in current "." directory

```
docker build --tag example/amzn-phpinfo .
```

See image info

```
docker image history example/amzn-phpinfo
```

```
IMAGE CREATED CREATED BY SIZE COMMENT
77066f284dea 2 minutes ago /bin/sh -c #(nop) EXPOSE 80 0B
ee2fcebe08bb 2 minutes ago /bin/sh -c #(nop) CMD ["/usr/sbin/httpd" "-… 0B
ac29f44aa839 2 minutes ago /bin/sh -c #(nop) COPY file:7aa92ce52044b7f0… 20B
9352d0227e03 2 minutes ago /bin/sh -c yum -y install php 203MB
47ac5b8a84d6 3 minutes ago /bin/sh -c yum -y install httpd 255MB
0e2161f5a988 3 minutes ago /bin/sh -c yum -y update 193MB
cd2d92bc1c0c 2 weeks ago /bin/sh -c #(nop) CMD ["/bin/bash"] 0B
<missing> 2 weeks ago /bin/sh -c #(nop) ADD file:119ae574c5d5b6e59… 163MB
```

```
docker image inspect example/amzn-phpinfo
```

Optimize size of custom docker image using Dockerfile

use one RUN instead of 3 RUN commands

```
FROM amazonlinux

RUN yum -y update && yum -y install httpd && yum -y install php

COPY ./index.php /var/www/html/index.php

CMD ["/usr/sbin/httpd", "-D", "FOREGROUND"]

EXPOSE 80
```

```
docker build --tag example/amzn-phpinfo2 .
```

```
docker images
```

Compare images size

```
REPOSITORY TAG IMAGE ID CREATED SIZE
example/amzn-phpinfo2 latest 09cfca98bf82 6 seconds ago 446MB
example/amzn-phpinfo latest 77066f284dea About an hour ago 814MB
```

```
docker image history example/amzn-phpinfo
```

```
IMAGE CREATED CREATED BY SIZE COMMENT
8778eaa349e0 15 seconds ago /bin/sh -c #(nop) EXPOSE 80 0B
76ae852f36aa 16 seconds ago /bin/sh -c #(nop) CMD ["/usr/sbin/httpd" "-… 0B
04073f3bdeb5 16 seconds ago /bin/sh -c #(nop) COPY file:7aa92ce52044b7f0… 20B
5fae081a55c5 17 seconds ago /bin/sh -c yum -y install php 203MB
d3de1d44ef67 32 seconds ago /bin/sh -c yum -y install httpd 255MB
79133349b929 About a minute ago /bin/sh -c yum -y update 193MB
cd2d92bc1c0c 2 weeks ago /bin/sh -c #(nop) CMD ["/bin/bash"] 0B
<missing> 2 weeks ago /bin/sh -c #(nop) ADD file:119ae574c5d5b6e59… 163MB
```

```
docker image history example/amzn-phpinfo2
```

```
IMAGE CREATED CREATED BY SIZE COMMENT
09cfca98bf82 4 minutes ago /bin/sh -c #(nop) EXPOSE 80 0B
e0f8728488e3 4 minutes ago /bin/sh -c #(nop) CMD ["/usr/sbin/httpd" "-… 0B
fe1e985876af 4 minutes ago /bin/sh -c #(nop) COPY file:7aa92ce52044b7f0… 20B
4f0abf0cea3b 4 minutes ago /bin/sh -c yum -y update && yum -y install h… 283MB
cd2d92bc1c0c 2 weeks ago /bin/sh -c #(nop) CMD ["/bin/bash"] 0B
<missing> 2 weeks ago /bin/sh -c #(nop) ADD file:119ae574c5d5b6e59… 163MB
```

Update image from the running or stopped container

```
sudo docker run -d -p 8000:80 kyivtank/amzn-phpinfo
docker exec -it e90a9e1ec094 bash
```

```
echo "<?php echo 'Current PHP version: ' . phpversion(); ?>" >/var/www/html/version.php
exit
```

```
docker ps
```

```
CONTAINER ID        IMAGE                         COMMAND                  CREATED
STATUS              PORTS                                  NAMES
6aa53631dccd        kyivtank/amzn-phpinfo         "/usr/sbin/httpd -D …"   5 minutes ago       Up 5
minutes        0.0.0.0:8000->80/tcp                   gracious_antonelli
```

```
docker commit  --message "Add version.php" 6aa53631dccd kyivtank/amzn-phpinfo2
```

```
docker image history kyivtank/amzn-phpinfo2
```

```
IMAGE               CREATED             CREATED BY                                      SIZE
COMMENT
f6ed0e8c64ec        About an hour ago   /usr/sbin/httpd -D FOREGROUND                   3kB                 Add
version.php
09cfca98bf82        2 hours ago         /bin/sh -c #(nop)  EXPOSE 80                    0B
<missing>           2 hours ago         /bin/sh -c #(nop)  CMD ["/usr/sbin/httpd" "-…   0B
<missing>           2 hours ago         /bin/sh -c #(nop) COPY file:7aa92ce52044b7f0…   20B
<missing>           2 hours ago         /bin/sh -c yum -y update && yum -y install h…   283MB
<missing>           2 weeks ago         /bin/sh -c #(nop)  CMD ["/bin/bash"]            0B
<missing>           2 weeks ago         /bin/sh -c #(nop) ADD file:119ae574c5d5b6e59…   163MB
```

Push to Docker hub

```
docker login
docker push kyivtank/amzn-phpinfo2
```

remove unused docker images

```
docker image prune -a
```