Docker, Google K8s, VMware Tanzu and RedHat OCP
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Day02

Containerization Concept and Docker Basic II

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what is container?
A container is a standard unit of software that packages up code and all its dependencies so the application runs quickly and reliably from one computing.

what is runtime?
A container runtime, also known as container engine, is a software component that can run containers on a host operating system.

what is image
A container image is an unchangeable, static file that includes executable code so it can run an isolated process

what is registry
A container registry is a repository—or collection of repositories—used to store and access container images.
registry comes in to:
-public, accessible by public https://hub.docker.com/ https://catalog.redhat.com/
-private, accessible by specific person/organization

registry address in Docker
cat /etc/containers/registries.conf
unqualified-search-registries = ["registry.fedoraproject.org", "registry.access.redhat.com", "registry.centos.org", "docker.io"]

search image
docker search rsyslog

image architect
rsyslog/syslog_appliance_alpine
<registry-name>/<image-owner>/<image-name>:<tag>

pull image
docker pull rsyslog/syslog_appliance_alpine

image list
docker images

inspect image
docker inspect rsyslog/syslog_appliance_alpine

delete image
docker image rmi httpd

login to registry
docker login catalog.redhat.com
Username: naghval
Password: *******

logout from registry
docker logout catalog.redhat.com

Run container/application through image
-fore-ground fg
docker run rsyslog/syslog_appliance_alpine
-back-ground bg
docker run -d rsyslog/syslog_appliance_alpine

list of containers
-up/running
docker ps
-total
docker ps -a

get inside container
docker exec -it 64342871631b ls /
-i intercative
-t terminal

come out from container
type 'exit' or press 'Ctrl+d'
/home/appliance # **exit** or **press Ctrl+d**
docker search apache
docker pull httpd
docker.io/library/httpd:latest
docker images
docker run -d --name apache httpd
docker ps
docker ps -a
docker exec -it 0e04eb8f3092 /bin/bash
root@0e04eb8f3092:/usr/local/apache2#
root@0e04eb8f3092:/usr/local/apache2# find / -name index.html
/usr/local/apache2/htdocs/index.html
root@0e04eb8f3092:/usr/local/apache2# cat /usr/local/apache2/htdocs/index.html
<html><body><h1>It works!</h1></body></html>
docker search nginx
docker pull nginx
docker.io/library/nginx:latest
docker images
docker run -d --name nginx nginx

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```
# docker ps
# docker exec -it nginx /bin/bash
root@402e3dca2325:/# find / -name index.html
root@402e3dca2325:/# cat /usr/share/nginx/html/index.html
<h1>Welcome to nginx!</h1>
root@402e3dca2325:/# curl localhost
<title>Welcome to nginx!</title>
root@402e3dca2325:/# exit
# docker container ls
```

Container Operation

```
# docker container stop 0e04eb8f3092
# docker container start 0e04eb8f3092
# docker container restart 0e04eb8f3092
# docker container rm apache                ->delete stopped container
# docker container rm apache -f             ->delete running container
# docker image rmi httpd
```

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