Announcements:

- Links to virtual machines, ssh key in Piazza Resources
- Next week: Ben Bennett
- This week: Let’s run K8s
- Office Hours - every Tuesday 1-2 - Zoom link in Piazza
- Sorry I missed office hours this week! I’ll be there next week.

Announcements:

- DevConf.US !!!
  - happening at BU in August, registration will open ~June
  - I am conference organizer :)
  - Call for Papers is open until April 15
  - It's free
  - We've reached out to recruiters
  - It's a developer-centric conference
  - There's free food!
  - There's a party!

https://www.devconf.info/us/

What's better than a bunch of slides explaining what K8s is?

```
[root]$ command -v setsebool >/dev/null 2>&1 || sudo setsebool -P container_manage_cgroup true

[root]$ dnf install podman

[root]$ podman run -d --rm --name microshift --privileged -v microshift-data:/var/lib -p 6443:6443
quay.io/microshift/microshift-aio:latest

[root]$ curl -O https://mirror.openshift.com/pub/openshift-v4/$(uname
-m)/clients/ocp/stable/openshift-client-linux.tar.gz

[root]$ tar -xf openshift-client-linux.tar.gz -C /usr/local/bin oc kubectl

[root]$ exit

[somalley]$ mkdir ~/.kube

[somalley]$ sudo podman cp microshift:/var/lib/microshift/resources/kubeadmin/kubeconfig ~/.kube/config

[somalley]$ sudo chown whoami: ~/.kube/config

[somalley]$ oc get pods -A
```

What’s better than a bunch of slides explaining what K8s is?

```
[somalley]$ oc get pods -A
NAMESPACE                       NAME                                       READY   STATUS    RESTARTS   AGE
kube-system                     kube-flannel-ds-72k4z                      1/1     Running   0          19m
kubevirt-hostpath-provisioner   kubevirt-hostpath-provisioner-wslvn        1/1     Running   0          18m
openshift-dns                   dns-default-cn5s9                          2/2     Running   0          19m
openshift-dns                   node-resolver-82dr5                        1/1     Running   0          19m
openshift-ingress               router-default-6c96f6bc66-dzshj             1/1     Running   0          19m
openshift-service-ca            service-ca-7bffb6f6bf-wsm2n                1/1     Running   0          19m
```

Cloud Native:

Cloud-native application development is an approach to **speed up building new applications, optimizing existing ones, and connecting all of them**. It speeds up the process of development and deployment.

- DevOps
- agile methodology
- Cloud platforms (Google, Azure, IBM, AWS)
- Kubernetes and Linux containers
- Continuous delivery

Distributed Computing:

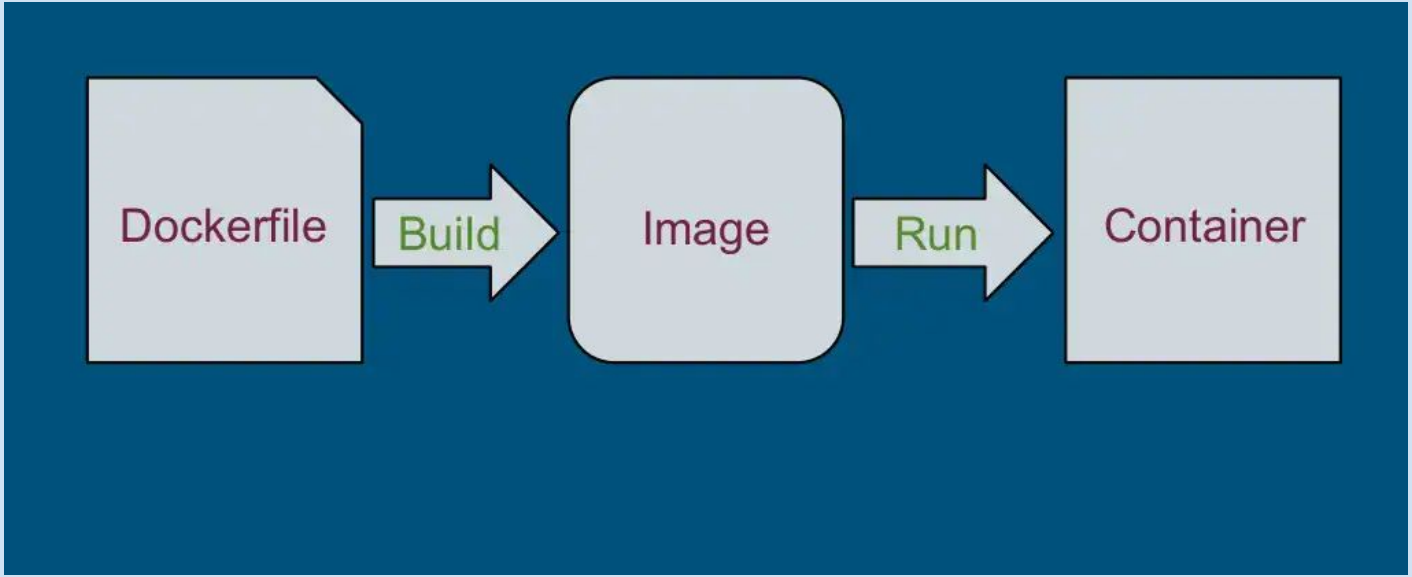
A distributed computer system consists of multiple software components that are on multiple computers, but run as a single system.

- can be physically close together and connected by a local network
- can be geographically distant and connected by a wide area network
- can consist of any number of possible configurations
    - mainframes, personal computers, workstations, minicomputers, and so on.

Distributed system - the goal is to make such a network work as a single computer.

- **Scalability**
- **Redundancy**

What are Containers?



Questions?

Coloring Book:
https://github.com/mairin/coloringbook-container-commandos/blob/master/Web.pdf

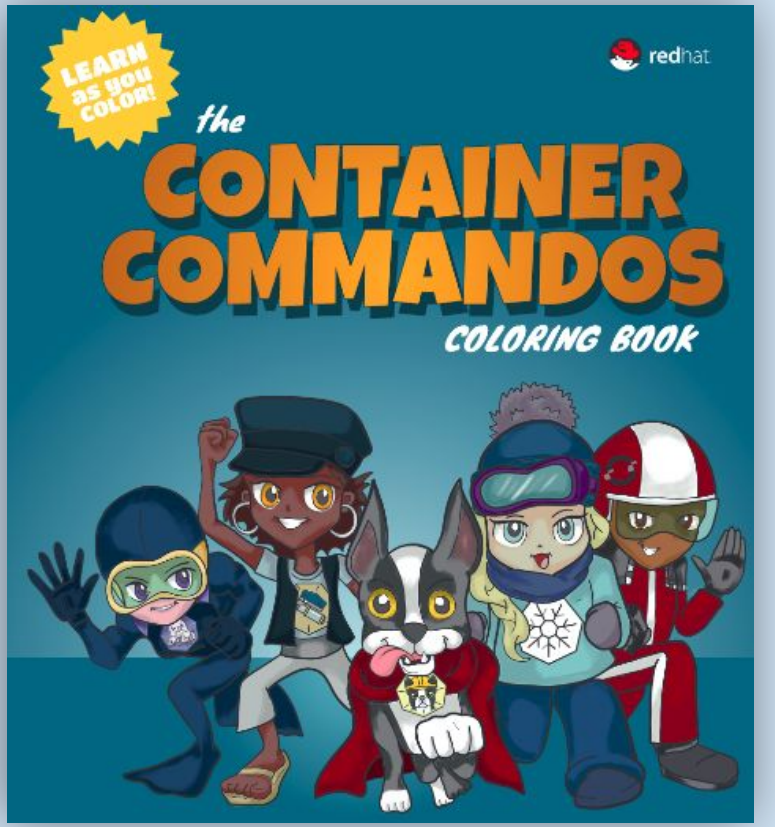
Docker Labs:
https://training.play-with-docker.com/dev-stage1/

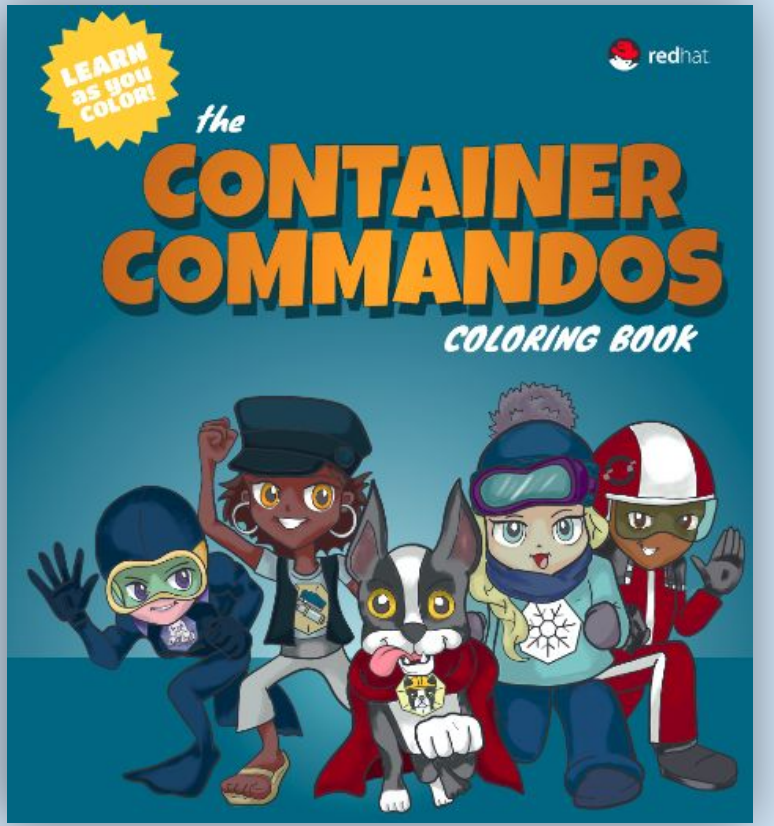
OpenShift Containers Labs:
https://developers.redhat.com/courses/subsystems

Containers Projects:
https://github.com/containers

Docker upstream:
https://github.com/moby/moby

My favorite commit: \o/ :-)
https://github.com/moby/moby/pull/14012




LEARN as you COLOR!
redhat
the
CONTAINER COMMANDOS
COLORING BOOK

More:

Cloud-native:
https://www.weave.works/technologies/going-cloud-native-6-essential-things-you-need-to-know/

Distributed Systems:
https://www.ibm.com/docs/en/txseries/8.2?topic=overview-what-is-distributed-computing

Distributed Computing:
https://www.ridge.co/blog/what-is-distributed-computing/