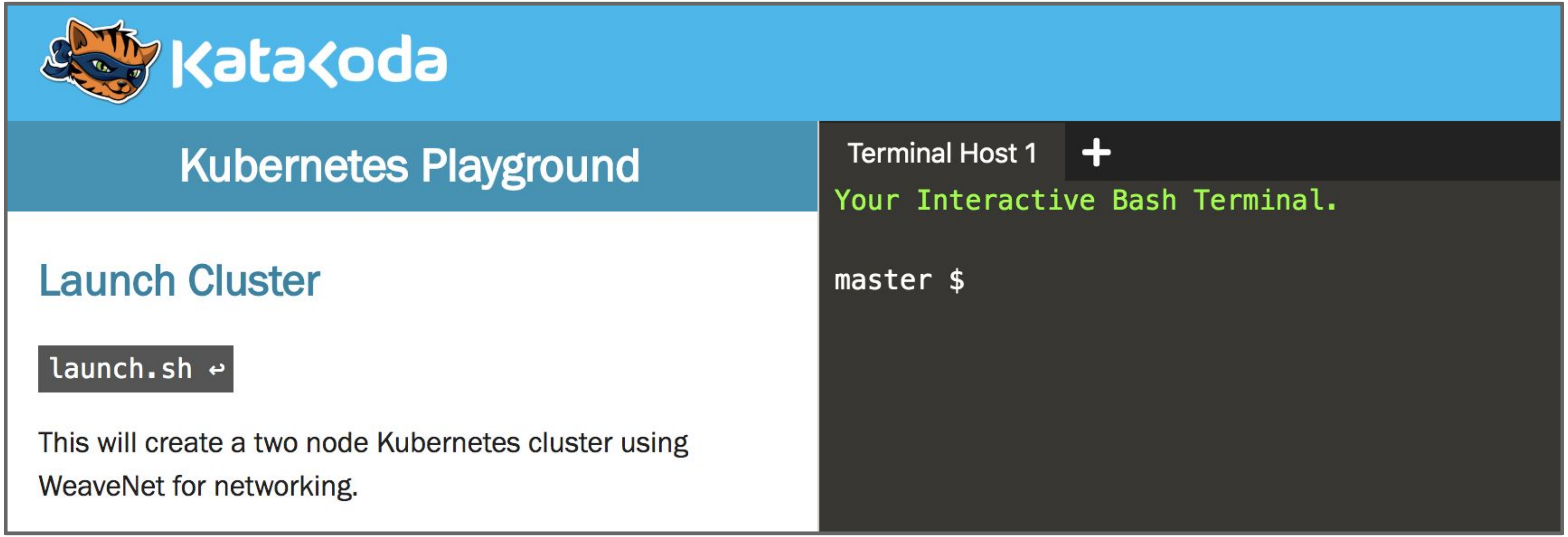
Demonstration

Overview

1. Kubernetes Environment
2. Create Docker Hub account
3. Copy Workshop Files
4. Build and Publish a Docker image
5. Create a Kubernetes `Deployment`

Kubernetes Environment



Launch Cluster

```
launch.sh ↩
```

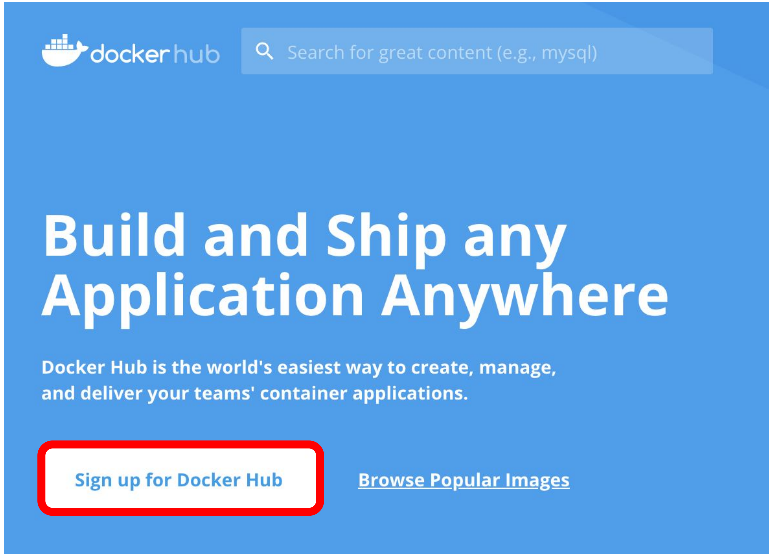
This will create a two node Kubernetes cluster using WeaveNet for networking.

```
Your Interactive Bash Terminal.

master $
```

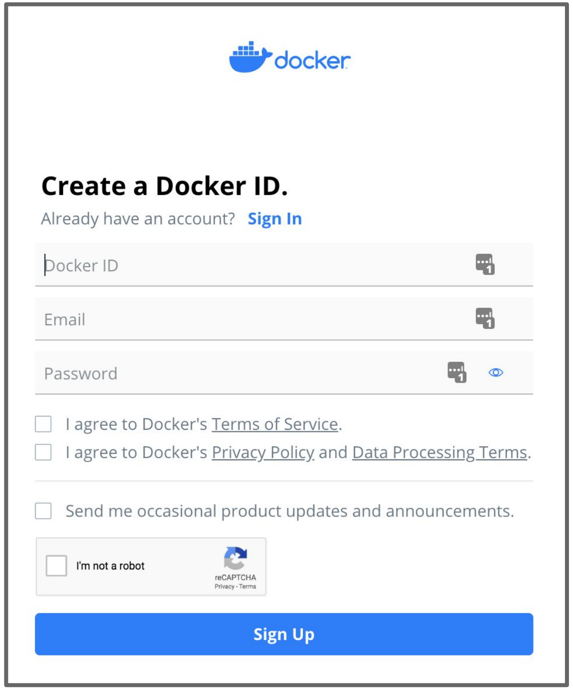
katacoda.com/courses/kubernetes/playground

Create a Docker Hub account



Build and Ship any Application Anywhere

Docker Hub is the world's easiest way to create, manage, and deliver your teams' container applications.



Create a Docker ID.

Already have an account? Sign In

Docker ID

Email

Password

□ I agree to Docker's Terms of Service.

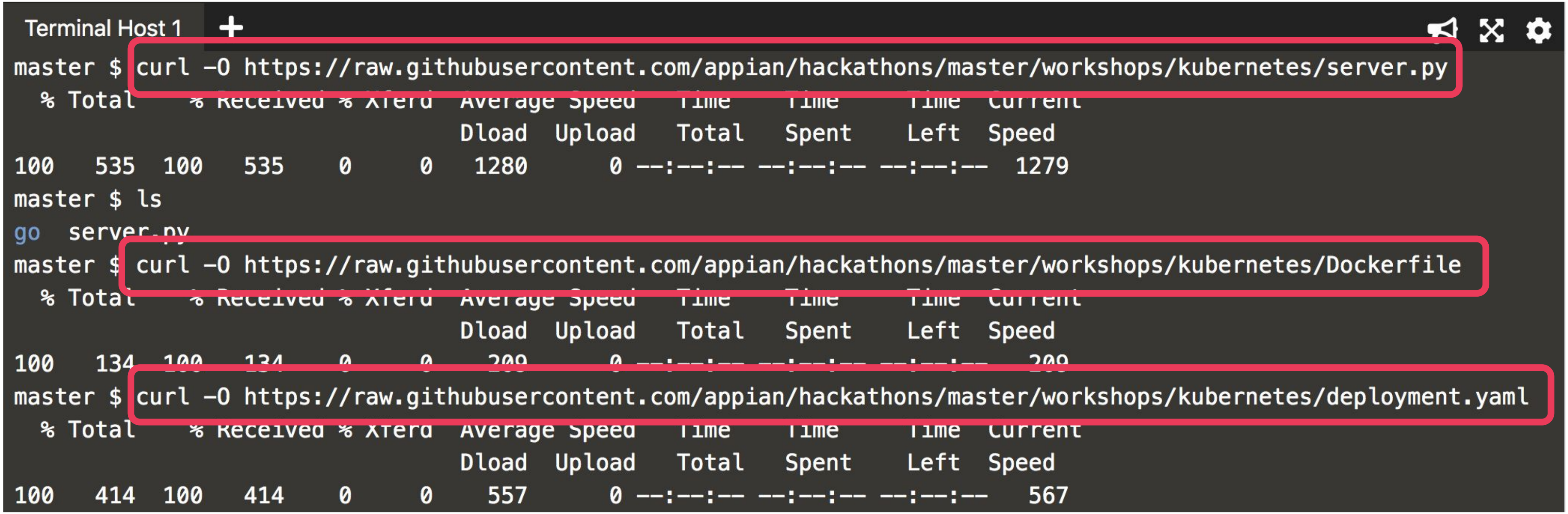
□ I agree to Docker's Privacy Policy and Data Processing Terms.

□ Send me occasional product updates and announcements.

□ I'm not a robot

hub.docker.com

Get the Workshop Files



```
master $ curl -O https://raw.githubusercontent.com/appian/hackathons/master/workshops/kubernetes/server.py
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100   535  100   535    0     0   1280      0 --:--:-- --:--:-- --:--:--  1279
master $ ls
go  server.py
master $ curl -O https://raw.githubusercontent.com/appian/hackathons/master/workshops/kubernetes/Dockerfile
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100   134  100   134    0     0    209      0 --:--:-- --:--:-- --:--:--   209
master $ curl -O https://raw.githubusercontent.com/appian/hackathons/master/workshops/kubernetes/deployment.yaml
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100   414  100   414    0     0    557      0 --:--:-- --:--:-- --:--:--   567
```

server.py, Dockerfile, and deployment.yaml

Build and publish a Docker image

server.py

```
from http.server import HTTPServer, BaseHTTPRequestHandler

class RequestHandler(BaseHTTPRequestHandler):
    def do_GET(self):
        self.send_response(200)
        self.send_header('Content-type', 'text/html')
        self.end_headers()
        self.wfile.write("<html><h1>Kubernetes (and Appian) is
pretty cool.</h1></html>".encode())

if __name__ == '__main__':
    server_address = ('', 8080)
    print('Listening on {}'.format(server_address))
    server = HTTPServer(server_address, RequestHandler)
    server.serve_forever()
```

Build and publish a Docker image

Dockerfile

```
FROM python:3.6-slim

COPY ./server.py /server.py

RUN adduser --uid 1000 --system user
USER 1000

ENTRYPOINT ["python", "server.py"]
```

Build and publish a Docker image

DON’T FORGET THE PERIOD

```
docker build .

docker login --username <username>
docker tag <SHA>
<username>/basic-server:<TAG>
docker push <username>/basic-server:<TAG>
```

Create a `Deployment` in the cluster

deployment.yaml (pt. 1)

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: <name>
  labels:
    app: <name>
```

deployment.yaml (pt. 2)

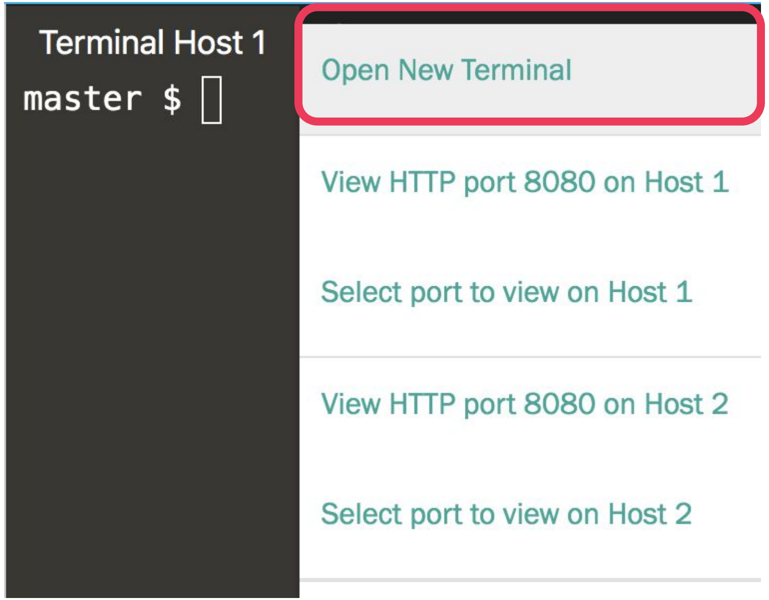
```
spec:
  replicas: 1
  selector:
    matchLabels:
      app: <name>
  template:
    metadata:
      labels:
        app: <name>
    spec:
      containers:
      - name: server
        image: <username>/basic-server:<tag>
        ports:
        - containerPort: 8080
```

Create a `Deployment` in the cluster

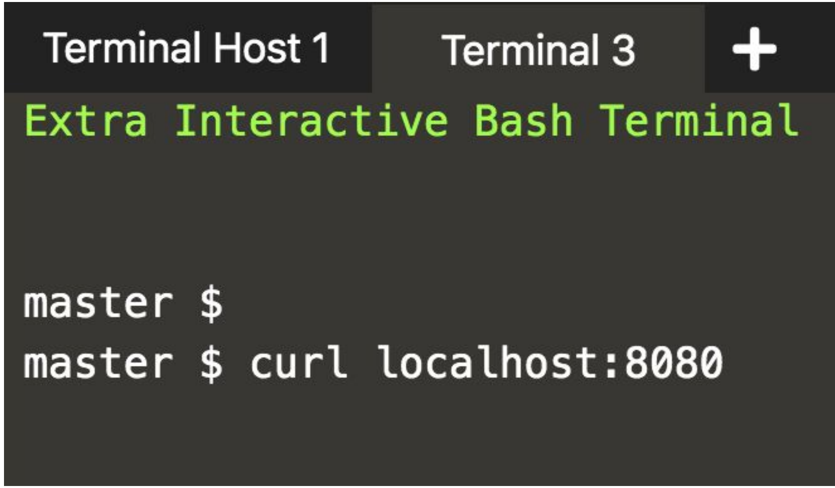
```
kubectl apply -f deployment.yaml

kubectl get pods
kubectl port-forward <pod> 8080
```

Create a `Deployment` in the cluster


Terminal Host 1
Open New Terminal
View HTTP port 8080 on Host 1
Select port to view on Host 1
View HTTP port 8080 on Host 2
Select port to view on Host 2

```
master $
```



```
Extra Interactive Bash Terminal


master $
master $ curl localhost:8080
```

Thank you!

Questions?