Install kubernetes

Spring Boot is a great way to write an application in Java. This scenario shows you how to create a Spring Boot application and run it in Kubernetes with as little fuss and bother as possible. And there's no YAML. To do this we need to do three things:

1. Create a Spring Boot application
2. Containerize it, and push the container to a registry
3. Deploy it to Kubernetes

Install and Run K8s

```
$ curl -Lo /usr/local/bin/kubectl https://storage.googleapis.com/kubernetes-release/release/v1.15.3/
bin/linux/amd64/kubectl && chmod +x /usr/local/bin/kubectl
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100 40.9M  100 40.9M    0     0  59.7M      0 --:--:-- --:--:-- --:--:-- 59.7M
```

Create a Cluster with Kind

```
$ curl -Lo /usr/local/bin/kind https://github.com/kubernetes-sigs/kind/releases/download/v0.5.1/kind
-linux-amd64 && chmod +x /usr/local/bin/kind
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100   629  100   629    0     0   1722      0 --:--:-- --:--:-- --:--:--  1728
100 39.1M  100 39.1M    0     0   9.9M      0  0:00:03  0:00:03 --:--:-- 11.4M
```

```
$ kind create cluster
Creating cluster "kind" ...
 ✓ Ensuring node image (kindest/node:v1.15.3) 🖼
 ✓ Preparing nodes 📦
 ✓ Creating kubeadm config 📜
 ✓ Starting control-plane 🕹
 ✓ Installing CNI 🔌
 ✓ Installing StorageClass 💾
Cluster creation complete. You can now use the cluster with:

export KUBECONFIG="$(kind get kubeconfig-path --name="kind")"
kubectl cluster-info
```

```
$ kubectl get all
NAME                            READY    STATUS            RESTARTS    AGE
pod/demo-5cbfcb49b5-d8zr8       0/1      ContainerCreating 0           4s


NAME                    TYPE       CLUSTER-IP      EXTERNAL-IP   PORT(S)    AGE
service/demo            ClusterIP  10.108.139.155  <none>        8080/TCP   4s
service/kubernetes      ClusterIP  10.96.0.1       <none>        443/TCP    7m48s


NAME                      READY   UP-TO-DATE   AVAILABLE    AGE
deployment.apps/demo      0/1     1            0            4s

NAME                                  DESIRED   CURRENT   READY   AGE
replicaset.apps/demo-5cbfcb49b5       1         1         0       4s
```

Deploy an Application to Kubernetes

`docker run -p 8080:8080 springguides/demo`

```
latest: Pulling from springguides/demo
e7c96db7181b: Pull complete
f910a506b6cb: Pull complete
b6abafe80f63: Pull complete
a7fabb34fc00: Pull complete
4da8fdea2de6: Pull complete
4f8061ea60ee: Pull complete
Digest: sha256:40f95ce3cfd02de78d1292910afd7f6e58120ec453c39f212def10fdfb2254e6
Status: Downloaded newer image for springguides/demo:latest


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 =========|_|==============|___/=/_/_/_/
 :: Spring Boot ::        (v2.2.1.RELEASE)

2020-05-02 09:41:57.389  INFO 1 --- [           main] com.example.demo.DemoApplication         : Sta
rting DemoApplication on fa5e5bccbdee with PID 1 (/app started by root in /)
2020-05-02 09:41:57.394  INFO 1 --- [           main] com.example.demo.DemoApplication         : No
active profile set, falling back to default profiles: default
2020-05-02 09:41:59.753  INFO 1 --- [           main] o.s.b.a.e.web.EndpointLinksResolver      : Exp
```

Deploy to Kubernetes

References:

https://www.katacoda.com/springguides/scenarios/install-kubernetes

https://github.com/kubernetes-sigs/kind

https://spring.io/guides