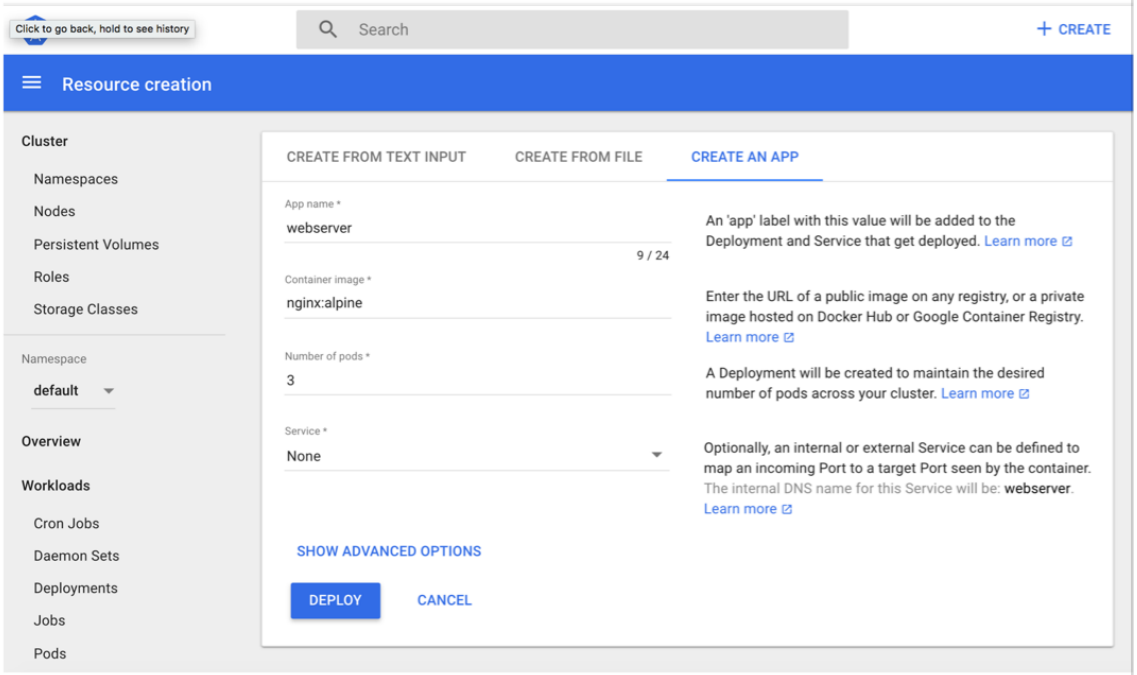
Chapter 11 Deploying a Stand-Alone Application

```
minikube start
minikube status
minikube dashboard
```

Creating an App on dashboard

"+ Create"

- The application name is **webserver**
- The Docker image to use is **nginx:alpine**, where **alpine** is the image tag
- The replica count, or the number of Pods, is 3
- No Service, as we will be creating it later.



Deploy a Containerized Application Web Interface

"Deploy"

```
$ kubectl get deployments
NAME        READY   UP-TO-DATE   AVAILABLE   AGE
webserver   3/3     3            3           9m
```

```
$ kubectl get replicasets
NAME                    DESIRED   CURRENT   READY   AGE
webserver-74d8bd488f    3         3         3       9m
```

```
$ kubectl get pods
NAME                          READY   STATUS    RESTARTS   AGE
webserver-74d8bd488f-dwbzz    1/1     Running   0          9m
webserver-74d8bd488f-npkzv    1/1     Running   0          9m
webserver-74d8bd488f-wvmpq    1/1     Running   0          9m
```

```
$ kubectl describe pod webserver-74d8bd488f-dwbzz
Name:           webserver-74d8bd488f-dwbzz
Namespace:      default
Priority:       0
Node:           minikube/10.0.2.15
Start Time:     Wed, 15 May 2019 13:17:33 -0500
Labels:         k8s-app=webserver
                pod-template-hash=74d8bd488f
Annotations:    <none>
Status:         Running
IP:             172.17.0.5
Controlled By:  ReplicaSet/webserver-74d8bd488f
Containers:
  webserver:
    Container ID:   docker://96302d70903fe3b45d5ff3745a706d67d77411c5378f1f293a4bd721896d6420
    Image:          nginx:alpine
    Image ID:       docker-
pullable://nginx@sha256:8d5341da24ccbdd195a82f2b57968ef5f95bc27b3c3691ace0c7d0acf5612edd
    Port:           <none>
    State:          Running
      Started:      Wed, 15 May 2019 13:17:33 -0500
    Ready:          True
    Restart Count:  0
...
```

kubectl describe pod <pod_id>

List Pods with Labels

```
$ kubectl get pods -L k8s-app,label2
NAME                          READY   STATUS    RESTARTS   AGE   K8S-APP     LABEL2
webserver-74d8bd488f-dwbzz    1/1     Running   0          14m   webserver
webserver-74d8bd488f-npkzv    1/1     Running   0          14m   webserver
webserver-74d8bd488f-wvmpq    1/1     Running   0          14m   webserver
```

```
$ kubectl get pods -l k8s-app=webserver
NAME                          READY   STATUS    RESTARTS   AGE
webserver-74d8bd488f-dwbzz    1/1     Running   0          17m
webserver-74d8bd488f-npkzv    1/1     Running   0          17m
webserver-74d8bd488f-wvmpq    1/1     Running   0          17m
```

Delete deployment

`kubectl delete deployments webserver`

- Deletes the ReplicaSet and Pods

Deploy an App Using the CLI

Create `webserver.yaml` with:

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: webserver
  labels:
      app: nginx
spec:
  replicas: 3
  selector:
      matchLabels:
          app: nginx
  template:
      metadata:
          labels:
              app: nginx
      spec:
          containers:
          - name: nginx
            image: nginx:alpine
            ports:
            - containerPort: 80
```

`kubectl create –f web server.yaml`

Exposing an App

Create a `webserver-svc.yaml` with:

```
apiVersion: v1
kind: Service
metadata:
  name: web-service
```

```
    labels:
      run: web-service
  spec:
    type: NodePort
    ports:
    - port: 80
      protocol: TCP
    selector:
      app: nginx
```

Create the Service:

`kubectl create -f web server-svc.yaml`

Exposing a Deployment with the `kubectl expose` command:

`kubectl expose deployment webserver --name=web-service --type=NodePort service/web-service exposed`