

Deploy an application in Kubernetes cluster using Docker image

```
devops@master:~$ kubectl run pyapp --image=prakaram/sayhello:latest --port=80 --replicas=2
```

kubectl run --generator=deployment/apps.v1 is DEPRECATED and will be removed in a future version. Use kubectl run --generator=run-pod/v1 or kubectl create instead.

deployment.apps/pyapp created

Watch the pods and their details

```
devops@master:~$ kubectl get pods
```

NAME	READY	STATUS	RESTARTS	AGE
pyapp-c486fff5c-ljndn	1/1	Running	0	42s
pyapp-c486fff5c-w2jfc	1/1	Running	0	42s

```
devops@master:~$ kubectl describe pods pyapp-c486fff5c-ljndn
```

Name: pyapp-c486fff5c-ljndn
Namespace: default
Priority: 0
PriorityClassName: <none>
Node: worker02/192.168.56.122
Start Time: Sun, 05 May 2019 18:56:56 +0530
Labels: pod-template-hash=c486fff5c
run=pyapp
Annotations: cni.projectcalico.org/podIP: 10.244.1.2/32
Status: Running
IP: 10.244.1.2
Controlled By: ReplicaSet/pyapp-c486fff5c
Containers:
 pyapp:
 Container ID: docker://929d6bd2cbe9a05baa9f635be8c21e4fe59fb6ccd749b060e566e73ae55c638f
 Image: prakaram/sayhello:latest
 Image ID: docker-pullable://prakaram/sayhello@sha256:33dfdfa51c1a8822b91163741e83bfb775534eb96055e7cb29e92a3b76852553
 Port: 80/TCP
 Host Port: 0/TCP
 State: Running
 Started: Sun, 05 May 2019 18:57:18 +0530
 Ready: True
 Restart Count: 0
 Environment: <none>
 Mounts:
 /var/run/secrets/kubernetes.io/serviceaccount from default-token-ss6kc (ro)
Conditions:
 Type Status
 Initialized True
 Ready True
 ContainersReady True
 PodScheduled True

Volumes:

default-token-ss6kc:

Type: Secret (a volume populated by a Secret)

SecretName: default-token-ss6kc

Optional: false

QoS Class: BestEffort

Node-Selectors: <none>

Tolerations: node.kubernetes.io/not-ready:NoExecute for 300s
node.kubernetes.io/unreachable:NoExecute for 300s

Events:

Type	Reason	Age	From	Message
Normal	Scheduled	11m	default-scheduler	Successfully assigned default/pyapp-c486fff5c-ljndn to worker02
Normal	Pulling	11m	kubelet, worker02	Pulling image "prakaram/sayhello:latest"
Normal	Pulled	11m	kubelet, worker02	Successfully pulled image "prakaram/sayhello:latest"
Normal	Created	11m	kubelet, worker02	Created container pyapp
Normal	Started	11m	kubelet, worker02	Started container pyapp

devops@master:~\$ **kubectl describe pods pyapp-c486fff5c-w2jfc**

Name: pyapp-c486fff5c-w2jfc

Namespace: default

Priority: 0

PriorityClassName: <none>

Node: **worker02**/192.168.56.122

Start Time: Sun, 05 May 2019 18:56:56 +0530

Labels: pod-template-hash=c486fff5c
run=pyapp

Annotations: cni.projectcalico.org/podIP: 10.244.1.3/32

Status: Running

IP: 10.244.1.3

Controlled By: ReplicaSet/pyapp-c486fff5c

Containers:

pyapp:

Container ID:

docker://0d6e6e8d83bfc0bbeb1a626d2c350c112ab4bf9d1306839530bd2afc97b0b6d1

Image: prakaram/sayhello:latest

Image ID: docker-

pullable://prakaram/sayhello@sha256:33dfdfa51c1a8822b91163741e83bfb775534eb96055e7cb29e92a3b76852553

Port: 80/TCP

Host Port: 0/TCP

State: Running

Started: Sun, 05 May 2019 18:57:21 +0530

Ready: True

Restart Count: 0

Environment: <none>

Mounts:

/var/run/secrets/kubernetes.io/serviceaccount from default-token-ss6kc

(ro)

Conditions:

Type	Status
Initialized	True
Ready	True
ContainersReady	True
PodScheduled	True

Volumes:

default-token-ss6kc:

Type:	Secret (a volume populated by a Secret)
SecretName:	default-token-ss6kc
Optional:	false

QoS Class: BestEffort

Node-Selectors: <none>

Tolerations: node.kubernetes.io/not-ready:NoExecute for 300s
node.kubernetes.io/unreachable:NoExecute for 300s

Events:

Type	Reason	Age	From	Message
Normal	Scheduled	13m	default-scheduler	Successfully assigned default/pyapp-c486fff5c-w2jfc to worker02
Normal	Pulling	13m	kubelet, worker02	Pulling image "prakaram/sayhello:latest"
Normal	Pulled	12m	kubelet, worker02	Successfully pulled image "prakaram/sayhello:latest"
Normal	Created	12m	kubelet, worker02	Created container pyapp
Normal	Started	12m	kubelet, worker02	Started container pyapp

devops@worker02:~\$ **sudo docker container ls**

[sudo] password for devops:

CONTAINER ID	IMAGE	COMMAND	CREATED
0d6e6e8d83bf	prakaram/sayhello	"python app.py"	41 minutes ago
Up 41 minutes			
c486fff5c-w2jfc_default_7454d0b2-6f39-11e9-b479-080027aad68a_0	prakaram/sayhello	"python app.py"	41 minutes ago
Up 41 minutes			
929d6bd2cbe9	prakaram/sayhello	"python app.py"	41 minutes ago
Up 41 minutes			
c486fff5c-ljndn_default_74528276-6f39-11e9-b479-080027aad68a_0			

Watch the deployment controller controlling the Pods

devops@master:~\$ **kubectl get deployments**

NAME	READY	UP-TO-DATE	AVAILABLE	AGE
pyapp	2/2	2	2	79s

Expose the deployed application as a service

devops@master:~\$ **kubectl expose deployment pyapp --type=LoadBalancer**
service/pyapp exposed

```
devops@master:~$ kubectl get services
```

NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE
kubernetes	ClusterIP	10.96.0.1	<none>	443/TCP	3h37m
pyapp	LoadBalancer	10.105.80.184	<pending>	80:31652/TCP	8s

```
devops@master:~$ kubectl describe service pyapp
```

```
Name: pyapp
Namespace: default
Labels: run=pyapp
Annotations: <none>
Selector: run=pyapp
Type: LoadBalancer
IP: 10.105.80.184
Port: <unset> 80/TCP
TargetPort: 80/TCP
NodePort: <unset> 31652/TCP
Endpoints: 10.244.1.2:80,10.244.1.3:80
Session Affinity: None
External Traffic Policy: Cluster
Events: <none>
```

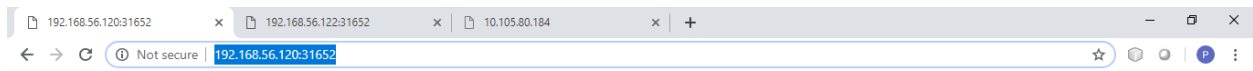
Deployments pyapp 10.105.80.184(Virtual IP)

Pods

pyapp-c486fff5c-ljndn	10.244.1.2
pyapp-c486fff5c-w2jfc	10.244.1.3

Docker Container

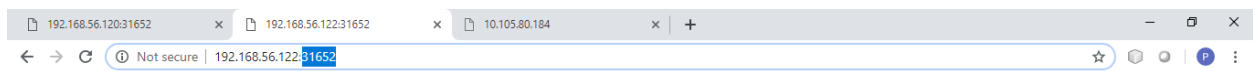
0d6e6e8d83bf
929d6bd2cbe9
prakaram/sayhello: latest



Hello World!

Hostname: pyapp-c486f5c-ljndn

Visits: cannot connect to Redis, counter disabled



Hello World!

Hostname: pyapp-c486f5c-ljndn

Visits: cannot connect to Redis, counter disabled

