

```

ontrolplane:~$ helm create myapp
reating myapp
ontrolplane:~$ ls
ilesystem get_helm.sh myapp
ontrolplane:~$ cd myapp
ontrolplane:~/myapp$ ls
hart.yaml charts templates values.yaml
ontrolplane:~/myapp$ cd templates
ontrolplane:~/myapp/templates$ ls
OTES.txt _helpers.tpl deployment.yaml hpa.yaml ingress.yaml service.yaml serviceaccount.yaml tests
ontrolplane:~/myapp/templates$ rm -rf .
m: refusing to remove '.' or '..' directory: skipping '.'
ontrolplane:~/myapp/templates$ rm -rf *
ontrolplane:~/myapp/templates$ ls
ontrolplane:~/myapp/templates$ vi deploy.yaml
ontrolplane:~/myapp/templates$ vi svc.yaml
ontrolplane:~/myapp/templates$ cd ..
ontrolplane:~/myapp$ helm install firstapp
NAME: firstapp
LAST DEPLOYED: Wed Apr 16 12:30:04 2025
NAMESPACE: default
STATUS: deployed
REVISION: 1
TEST SUITE: None
ontrolplane:~/myapp$ kubectl get pods
NAME                                READY    STATUS              RESTARTS   AGE
ginx-deployment-647677fc66-bs176    0/1      ContainerCreating   0           7s
ginx-deployment-647677fc66-cr2f4    0/1      ContainerCreating   0           7s
ginx-deployment-647677fc66-z8ph4    0/1      ContainerCreating   0           7s
ontrolplane:~/myapp$ kubectl get svc
NAME      TYPE        CLUSTER-IP    EXTERNAL-IP    PORT(S)    AGE
kubernetes ClusterIP   10.96.0.1     <none>         443/TCP    24d
my-service ClusterIP   10.96.228.241 <none>         80/TCP     11s

```

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nginx-deployment-647677fc66-cr2f4    0/1      ContainerCreating   0           7s
nginx-deployment-647677fc66-z8ph4    0/1      ContainerCreating   0           7s
ontrolplane:~/myapp$ kubectl get svc
NAME      TYPE        CLUSTER-IP    EXTERNAL-IP    PORT(S)    AGE
kubernetes ClusterIP   10.96.0.1     <none>         443/TCP    24d
my-service ClusterIP   10.96.228.241 <none>         80/TCP     11s
ontrolplane:~/myapp$ cd templates
ontrolplane:~/myapp/templates$ ls
deploy.yaml svc.yaml
ontrolplane:~/myapp/templates$ cd deploy.yaml
bash: cd: deploy.yaml: Not a directory
ontrolplane:~/myapp/templates$ vi deploy.yaml
ontrolplane:~/myapp/templates$ cd ..
ontrolplane:~/myapp$ helm ls
NAME      NAMESPACE    REVISION    UPDATED                               STATUS    CHART        APP VERSION
firstapp  default       1           2025-04-16 12:30:04.40919597 +0000 UTC deployed  myapp-0.1.0  1.16.0
ontrolplane:~/myapp$ helm upgrade firstapp .
Release "firstapp" has been upgraded. Happy Helming!
NAME: firstapp
LAST DEPLOYED: Wed Apr 16 12:32:17 2025
NAMESPACE: default
STATUS: deployed
REVISION: 2
TEST SUITE: None
ontrolplane:~/myapp$ helm ls
NAME      NAMESPACE    REVISION    UPDATED                               STATUS    CHART        APP VERSION
firstapp  default       2           2025-04-16 12:32:17.266877933 +0000 UTC deployed  myapp-0.1.0  1.16.0
ontrolplane:~/myapp$ helm history firstapp
REVISION    UPDATED              STATUS      CHART        APP VERSION    DESCRIPTION
1           Wed Apr 16 12:30:04 2025    superseded  myapp-0.1.0  1.16.0         Install complete
2           Wed Apr 16 12:32:17 2025    deployed   myapp-0.1.0  1.16.0         Upgrade complete
ontrolplane:~/myapp$ kubectl get pods
NAME                                READY    STATUS    RESTARTS   AGE
ginx-deployment-647677fc66-bs176    1/1      Running   0           2m43s
ontrolplane:~/myapp$

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```
controlplane:~/myapp$ cat values.yaml ✓
# Default values for myapp.
# This is a YAML-formatted file.
# Declare variables to be passed into your templates.

# This will set the replicaset count more information can be found here: https://kubernetes.io/docs/concepts/
replicaCount: 1 ✓

# This sets the container image more information can be found here: https://kubernetes.io/docs/concepts/con
image:
  repository: nginx ✓
  # This sets the pull policy for images.
  pullPolicy: IfNotPresent
  # Overrides the image tag whose default is the chart appVersion.
  tag: ""

# This is for the secrets for pulling an image from a private repository more information can be found here
figure-pod-container/pull-image-private-registry/
imagePullSecrets: []
# This is to override the chart name.
nameOverride: ""
fullnameOverride: ""

# This section builds out the service account more information can be found here: https://kubernetes.io/doc
serviceAccount:
  # Specifies whether a service account should be created
  create: true
  # Automatically mount a ServiceAccount's API credentials?
  automount: true
```

```
affinity: {}
controlplane:~/myapp$ ls
Chart.yaml  charts  templates  values.yaml
controlplane:~/myapp$ cd templates
controlplane:~/myapp/templates$ ls
deploy.yaml  svc.yaml
controlplane:~/myapp/templates$ vi deploy.yaml
controlplane:~/myapp/templates$ vat deploy.yaml
Command 'vat' not found, did you mean:
  command 'pat' from deb dist (1:3.5-236-1)
  command 'at' from deb at (3.2.5-1ubuntu1)
  command 'vit' from deb vit (2.3.2-1)
  command 'vcap' from deb atfs (1.4pl6-16)
  command 'vam' from deb vim-addon-manager (0.5.10)
  command 'iat' from deb iat (0.1.3-7.1)
  command 'vax' from deb simh (3.8.1-6.1)
  command 'dat' from deb liballegro4-dev (2:4.4.3.1-4)
  command 'cat' from deb coreutils (9.4-2ubuntu2)
  command 'vt' from deb vt (0.57721+ds-3)
  command 'bat' from deb bacula-console-qt (9.6.7-7)
Try: apt install <deb name>
controlplane:~/myapp/templates$ cat deploy.yaml
apiVersion: apps/v1
kind: Deployment
metadata:
  name: nginx-deployment
  labels:
    app: nginx
spec:
  replicas: {{.Values.replicaCount}}
  selector:
    matchLabels:
      app: nginx
  template:
```

```

    app: nginx
spec:
  replicas: {{.Values.replicaCount}}
  selector:
    matchLabels:
      app: nginx
  template:
    metadata:
      labels:
        app: nginx
    spec:
      containers:
        - name: nginx
          image: {{.Values.image.repository}}
          ports:
            - containerPort: 80

```

controlplane:~/myapp/templates\$ kubectl get pods

NAME	READY	STATUS	RESTARTS	AGE
nginx-deployment-647677fc66-bsl76	1/1	Running	0	13m

controlplane:~/myapp/templates\$ kubectl describe pod nginx-deployment-647677fc66-bsl76

```

Name:          nginx-deployment-647677fc66-bsl76
Namespace:     default
Priority:       0
Service Account: default
Node:          node01/172.30.2.2
Start Time:    Wed, 16 Apr 2025 12:30:04 +0000
Labels:        app=nginx
               pod-template-hash=647677fc66
Annotations:   cni.projectcalico.org/containerID: 00998ed62464b8cb8404eddfca107cea21face3327912b33fb731e63cf21b076
               cni.projectcalico.org/podIP: 192.168.1.6/32
               cni.projectcalico.org/podIPs: 192.168.1.6/32
Status:        Running
IP:            192.168.1.6
Events:
  Type     Reason      Age   From          Message
  ----     -
  Normal   Scheduled   13m   default-scheduler   Successfully assigned default/nginx-deployment-647677fc66-bsl76 to node01
  Normal   Pulling     13m   kubelet          Pulling image "nginx:1.14.2"
  Normal   Pulled      13m   kubelet          Successfully pulled image "nginx:1.14.2" in 386ms (6.235s including waiting). Image size
  bytes.
  Normal   Created     13m   kubelet          Created container: nginx
  Normal   Started     13m   kubelet          Started container nginx

```

controlplane:~/myapp/templates\$ cd ..

controlplane:~/myapp\$ helm upgrade first-app .

Error: UPGRADE FAILED: "first-app" has no deployed releases

controlplane:~/myapp\$ helm ls

NAME	NAMESPACE	REVISION	UPDATED	STATUS	CHART	APP VERSION
firstapp	default	2	2025-04-16 12:32:17.266877933 +0000 UTC	deployed	myapp-0.1.0	1.16.0

controlplane:~/myapp\$ helm upgrade firstapp .

Release "firstapp" has been upgraded. Happy Helming!

```

NAME: firstapp
LAST DEPLOYED: Wed Apr 16 12:44:14 2025
NAMESPACE: default
STATUS: deployed
REVISION: 3
TEST SUITE: None

```

controlplane:~/myapp\$ kubectl get pods

kubectl: command not found

controlplane:~/myapp\$ kubectl get pods

NAME	READY	STATUS	RESTARTS	AGE
nginx-deployment-64598b8f46-w4lpq	1/1	Running	0	16s

controlplane:~/myapp\$ kubectl describe pod nginx-deployment-64598b8f46-w4lpq

```

Name:          nginx-deployment-64598b8f46-w4lpq
Namespace:     default
Priority:       0
Service Account: default
Node:          node01/172.30.2.2
Start Time:    Wed, 16 Apr 2025 12:44:14 +0000

```

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TokenExpirationSeconds: 3607
ConfigMapName: kube-root-ca.crt
ConfigMapOptional: <nil>
DownwardAPI: true
QoS Class: BestEffort
Node-Selectors: <none>
Tolerations: node.kubernetes.io/not-ready:NoExecute op=Exists for 300s
              node.kubernetes.io/unreachable:NoExecute op=Exists for 300s

Events:
  Type    Reason      Age   From          Message
  ----    -
Normal    Scheduled   33s   default-scheduler Successfully assigned default/nginx-deployment-64598b8f46-w4lpq to node01
Normal    Pulling     33s   kubelet        Pulling image "nginx"
Normal    Pulled      26s   kubelet        Successfully pulled image "nginx" in 6.583s (6.583s including waiting). Image size: 72207578 b
Normal    Created     26s   kubelet        Created container: nginx
Normal    Started     26s   kubelet        Started container nginx

controlplane:~/myapp$ helm history firstapp
REVISION    UPDATED              STATUS      CHART          APP VERSION    DESCRIPTION
1            Wed Apr 16 12:30:04 2025    superseded    myapp-0.1.0    1.16.0         Install complete
2            Wed Apr 16 12:32:17 2025    superseded    myapp-0.1.0    1.16.0         Upgrade complete
3            Wed Apr 16 12:44:14 2025    deployed     myapp-0.1.0    1.16.0         Upgrade complete

controlplane:~/myapp$ helm rollback firstapp
Rollback was a success! Happy Helming!
controlplane:~/myapp$ helm rollback firstapp
Rollback was a success! Happy Helming!
controlplane:~/myapp$ helm history firstapp
REVISION    UPDATED              STATUS      CHART          APP VERSION    DESCRIPTION
1            Wed Apr 16 12:30:04 2025    superseded    myapp-0.1.0    1.16.0         Install complete
2            Wed Apr 16 12:32:17 2025    superseded    myapp-0.1.0    1.16.0         Upgrade complete
3            Wed Apr 16 12:44:14 2025    superseded    myapp-0.1.0    1.16.0         Upgrade complete
4            Wed Apr 16 12:45:18 2025    superseded    myapp-0.1.0    1.16.0         Rollback to 2
5            Wed Apr 16 12:45:22 2025    deployed     myapp-0.1.0    1.16.0         Rollback to 3

controlplane:~/myapp$ kubectl get pods
NAME                                READY   STATUS    RESTARTS   AGE
nginx-deployment-64598b8f46-fr22z  1/1     Running   0           25s
node.kubernetes.io/unreachable:NoExecute op=Exists for 300s

Events:
  Type    Reason      Age   From          Message
  ----    -
Normal    Scheduled   20s   default-scheduler Successfully assigned default/nginx-deployment-647677fc66-r262f to node01
Normal    Pulled      20s   kubelet        Container image "nginx:1.14.2" already present on machine
Normal    Created     20s   kubelet        Created container: nginx
Normal    Started     20s   kubelet        Started container nginx

controlplane:~/myapp$ helm history firstapp
REVISION    UPDATED              STATUS      CHART          APP VERSION    DESCRIPTION
1            Wed Apr 16 12:30:04 2025    superseded    myapp-0.1.0    1.16.0         Install complete
2            Wed Apr 16 12:32:17 2025    superseded    myapp-0.1.0    1.16.0         Upgrade complete
3            Wed Apr 16 12:44:14 2025    superseded    myapp-0.1.0    1.16.0         Upgrade complete
4            Wed Apr 16 12:45:18 2025    superseded    myapp-0.1.0    1.16.0         Rollback to 2
5            Wed Apr 16 12:45:22 2025    superseded    myapp-0.1.0    1.16.0         Rollback to 3
6            Wed Apr 16 12:46:18 2025    deployed     myapp-0.1.0    1.16.0         Rollback to 4

controlplane:~/myapp$ helm get manifest firstapp --revision 5
---
# Source: myapp/templates/svc.yaml
apiVersion: v1
kind: Service
metadata:
  name: my-service
spec:
  selector:
    app.kubernetes.io/name: MyApp
  ports:
    - protocol: TCP

```

```

controlplane:~/myapp$ ls
Chart.yaml  charts  templates  values.yaml
controlplane:~/myapp$ cd templates
controlplane:~/myapp/templates$ ls
deploy.yaml  svc.yaml
controlplane:~/myapp/templates$ cd ..
controlplane:~/myapp$ touch values-test.yaml
controlplane:~/myapp$ ^C
controlplane:~/myapp$ vi values-test.yaml
controlplane:~/myapp$ cat values-test.yaml
replicaCount: 5
image:
  repository: nginx:perl
controlplane:~/myapp$ kubectl get pods
NAME                                READY   STATUS    RESTARTS   AGE
nginx-deployment-647677fc66-r262f   1/1     Running   0           10m
controlplane:~/myapp$ helm upgrade firstapp ./ -f values-test.yaml
Release "firstapp" has been upgraded. Happy Helming!
NAME: firstapp
LAST DEPLOYED: Wed Apr 16 12:59:52 2025
NAMESPACE: default
STATUS: deployed
REVISION: 7
TEST SUITE: None
controlplane:~/myapp$ kubectl get pods
NAME                                READY   STATUS             RESTARTS   AGE
nginx-deployment-647677fc66-hrpnx   0/1     Completed          0           10s
nginx-deployment-647677fc66-r262f   1/1     Running            0           13m
nginx-deployment-647677fc66-wwvfg   0/1     Completed          0           10s
nginx-deployment-647677fc66-xq4wt   1/1     Running            0           10s
nginx-deployment-74ddd47755-fbmsf   0/1     ContainerCreating  0           10s
nginx-deployment-74ddd47755-p6ztw   0/1     ContainerCreating  0            1s
nginx-deployment-74ddd47755-rvbl6   1/1     Running            0           10s
nginx-deployment-74ddd47755-rx652   1/1     Running            0           10s
nginx-deployment-74ddd47755-wwwpv   0/1     ContainerCreating  0            1s

```

```

nginx-deployment-74ddd47755-wwwpv 0/1 ContainerCreating 0 1s
controlplane:~/myapp$ kubectl get pods
NAME                                READY   STATUS    RESTARTS   AGE
nginx-deployment-74ddd47755-fbmsf   1/1     Running   0           15s
nginx-deployment-74ddd47755-p6ztw   1/1     Running   0           6s
nginx-deployment-74ddd47755-rvb16   1/1     Running   0           15s
nginx-deployment-74ddd47755-rx652   1/1     Running   0           15s
nginx-deployment-74ddd47755-wwwpv   1/1     Running   0           6s
controlplane:~/myapp$ kubectl describe pod nginx-deployment-74ddd47755-fbmsf
Name:                               nginx-deployment-74ddd47755-fbmsf
Namespace:                           default
Priority:                             0
Service Account:                     default
Node:                                node01/172.30.2.2
Start Time:                           Wed, 16 Apr 2025 12:59:53 +0000
Labels:                               app=nginx
                                      pod-template-hash=74ddd47755
Annotations:                          cni.projectcalico.org/containerID: 7127765bc3e3556a9851c66c0ef174af570ba2ded34f99dd49094fa541d2c7d7
                                      cni.projectcalico.org/podIP: 192.168.1.14/32
                                      cni.projectcalico.org/podIPs: 192.168.1.14/32
Status:                               Running
IP:                                   192.168.1.14
IPs:
  IP:                                 192.168.1.14
Controlled By:                        ReplicaSet/nginx-deployment-74ddd47755
Containers:
  nginx:
    Container ID:                     containerd://3d3d5ec4d16753a00a2a7e111ee24a0519684720549e12c469307c898482a17a
    Image:                             nginx:perl
    Image ID:                         docker.io/library/nginx@sha256:81aa342ba08035632898b78d46d0e11d79abee63b3a6994a44ac34e102ef888
    Port:                             80/TCP
    Host Port:                         0/TCP
    State:                             Running
      Started:                         Wed, 16 Apr 2025 13:00:03 +0000
    Ready:                             True
  State:                               Running
    Started:                           Wed, 16 Apr 2025 13:00:03 +0000
    Ready:                             True
    Restart Count:                     0
    Environment:                      <none>
    Mounts:
      /var/run/secrets/kubernetes.io/serviceaccount from kube-api-access-flk5m (ro)
Conditions:
  Type                               Status
PodReadyToStartContainers           True
Initialized                         True
Ready                               True
ContainersReady                     True
PodScheduled                         True
Volumes:
kube-api-access-flk5m:
  Type:                               Projected (a volume that contains injected data from multiple sources)
  TokenExpirationSeconds:             3607
  ConfigMapName:                     kube-root-ca.crt
  ConfigMapOptional:                  <nil>
  DownwardAPI:                       true
  S Class:                           BestEffort
  Node-Selectors:                     <none>
  Tolerations:
    node.kubernetes.io/not-ready:NoExecute op=Exists for 300s
    node.kubernetes.io/unreachable:NoExecute op=Exists for 300s
Events:
  Type    Reason      Age   From          Message
  ----    -
Normal    Scheduled   58s   default-scheduler   Successfully assigned default/nginx-deployment-74ddd47755-fbmsf to node01
Normal    Pulling    56s   kubelet         Pulling image "nginx:perl"
Normal    Pulled     49s   kubelet         Successfully pulled image "nginx:perl" in 1.279s (7.451s including waiting). Image size: 838130
Normal    Created    48s   kubelet         Created container: nginx
Normal    Started    48s   kubelet         Started container nginx
controlplane:~/myapp$

```

```

buntu@k8s-master:~$ helm repo add argo https://argoproj.github.io/argo-helm
argo* has been added to your repositories
buntu@k8s-master:~$ helm install my-argo-cd argo/argo-cd --version 7.8.26
NAME: my-argo-cd
LAST DEPLOYED: Wed Apr 16 13:12:24 2025
NAMESPACE: default
STATUS: deployed
REVISION: 1
TEST SUITE: None
NOTES:
In order to access the server UI you have the following options:

. kubectl port-forward service/my-argo-cd-argocd-server -n default 8080:443
and then open the browser on http://localhost:8080 and accept the certificate

. enable ingress in the values file 'server.ingress.enabled' and either
  - Add the annotation for ssl passthrough: https://argo-cd.readthedocs.io/en/stable/operator-manual/ingress/#option-1-ssl-passthrough
  - Set the 'configs.params.'server.insecure' in the values file and terminate SSL at your ingress: https://argo-cd.readthedocs.io/en/stable/operator-manual/ingress/#option-2-multiple-ingress-objects-and-hosts

```

After reaching the UI the first time you can login with username: admin and the random password generated during the installation. You can find the password by running:

```

kubectl -n default get secret argocd-initial-admin-secret -o jsonpath="{.data.password}" | base64 -d
You should delete the initial secret afterwards as suggested by the Getting Started Guide: https://argo-cd.readthedocs.io/en/stable/getting_started/#4-login-using-the-cli

```

```

buntu@k8s-master:~$ kubectl get pods
NAME                                READY   STATUS    RESTARTS   AGE
my-argo-cd-argocd-applicationset-controller-0   0/1     Running   0          20s
my-argo-cd-argocd-applicationset-controller-869cf6d798-7pkc4   1/1     Running   0          20s
my-argo-cd-argocd-dex-server-5f8d87dfd-gwzqkq   1/1     Running   0          20s
my-argo-cd-argocd-notifications-controller-688bf6796b-1k7xl   1/1     Running   0          20s
my-argo-cd-argocd-redis-556077d97-2bvd1        1/1     Running   0          20s
my-argo-cd-argocd-redis-secret-init-r6gt6       0/1     Completed 0          42s
my-argo-cd-argocd-repo-server-84f9b986cd-jmqmd   0/1     Running   0          20s
my-argo-cd-argocd-server-598f9c45b4-n2tk5      0/1     Running   0          20s
gitlab-deployment-75f9c5858-rr27s             1/1     Running   1 (108s ago) 20h
gitlab-deployment-75f9c5858-vvfff             1/1     Running   1 (108s ago) 20h

```

```

buntu@k8s-master:~$ kubectl get svc
NAME                                TYPE               CLUSTER-IP      EXTERNAL-IP      PORT(S)          AGE
kubernetes                         ClusterIP          10.96.0.1       <none>           443/TCP          6d23h
my-argo-cd-argocd-applicationset-controller ClusterIP          10.103.67.58   <none>           7000/TCP         32s

```

```

ubuntu@k8s-master:~$ kubectl get svc
NAME                                TYPE               CLUSTER-IP      EXTERNAL-IP      PORT(S)          AGE
kubernetes                         ClusterIP          10.96.0.1       <none>           443/TCP          6d23h
my-argo-cd-argocd-applicationset-controller ClusterIP          10.103.67.58   <none>           7000/TCP         32s
my-argo-cd-argocd-dex-server       ClusterIP          10.107.171.114 <none>           5556/TCP,5557/TCP 32s
my-argo-cd-argocd-redis            ClusterIP          10.104.7.119   <none>           6379/TCP         32s
my-argo-cd-argocd-repo-server      ClusterIP          10.96.95.145   <none>           8081/TCP         32s
my-argo-cd-argocd-server           ClusterIP          10.110.18.224 <none>           80/TCP,443/TCP   32s
my-service                         NodePort          10.98.11.115   <none>           80:30007/TCP     6d22h

```

```

ubuntu@k8s-master:~$ kubectl edit svc my-argo-cd-argocd-server
service/my-argo-cd-argocd-server edited
ubuntu@k8s-master:~$ kubectl get svc
NAME                                TYPE               CLUSTER-IP      EXTERNAL-IP      PORT(S)          AGE
kubernetes                         ClusterIP          10.96.0.1       <none>           443/TCP          6d23h
my-argo-cd-argocd-applicationset-controller ClusterIP          10.103.67.58   <none>           7000/TCP         2m4s
my-argo-cd-argocd-dex-server       ClusterIP          10.107.171.114 <none>           5556/TCP,5557/TCP 2m4s
my-argo-cd-argocd-redis            ClusterIP          10.104.7.119   <none>           6379/TCP         2m4s
my-argo-cd-argocd-repo-server      ClusterIP          10.96.95.145   <none>           8081/TCP         2m4s
my-argo-cd-argocd-server           ClusterIP          10.110.18.224 <none>           80:31375/TCP,443:32095/TCP 2m4s
my-service                         NodePort          10.98.11.115   <none>           80:30007/TCP     6d22h

```

Not secure https://13.233.110.252:31375/login?return_url=https%3A%2F%2F13.233.110.252%3A31375%2Fapplications

Gmail YouTube Maps Chat gpt Google GitHub - Pierian-Da...

Let's get stuff deployed!

