1. Deploy jenkins with master and slave using helm chart

```
sarahkossmann@Sarahs-MacBook-Pro:helm-charts/jenkins <master>$ helm repo add jenkins https://charts.jenkins.io
"jenkins" has been added to your repositories
sarahkossmann@Sarahs-MacBook-Pro:helm-charts/jenkins <master>$ helm repo list
NAME    URL
jenkins https://charts.jenkins.io
sarahkossmann@Sarahs-MacBook-Pro:helm-charts/jenkins <master>$ helm search repo jenkins
NAME            CHART VERSION   APP VERSION     DESCRIPTION
jenkins/jenkins 4.2.12          2.361.3         Jenkins - Build great things at any scale! The ...
sarahkossmann@Sarahs-MacBook-Pro:helm-charts/jenkins <master>$ helm install my-release stable/jenkins
Error: INSTALLATION FAILED: failed to download "stable/jenkins"
sarahkossmann@Sarahs-MacBook-Pro:helm-charts/jenkins <master>$ helm install my-release jenkins/jenkins
NAME: my-release
LAST DEPLOYED: Fri Nov  4 16:23:20 2022
NAMESPACE: default
STATUS: deployed
REVISION: 1
NOTES:
1. Get your 'admin' user password by running:
  kubectl exec --namespace default -it svc/my-release-jenkins -c jenkins -- /bin/cat /run/secrets/additional/chart-admin-password && echo
2. Get the Jenkins URL to visit by running these commands in the same shell:
  echo http://127.0.0.1:8080
  kubectl --namespace default port-forward svc/my-release-jenkins 8080:8080

3. Login with the password from step 1 and the username: admin
4. Configure security realm and authorization strategy
5. Use Jenkins Configuration as Code by specifying configScripts in your values.yaml file, see documentation: http:///configuration-as-code and examples: https://github.com/jenkinsci/configuration-as-code
-plugin/tree/master/demos

For more information on running Jenkins on Kubernetes, visit:
https://cloud.google.com/solutions/jenkins-on-container-engine

For more information about Jenkins Configuration as Code, visit:
https://jenkins.io/projects/jcasc/


NOTE: Consider using a custom image with pre-installed plugins
sarahkossmann@Sarahs-MacBook-Pro:helm-charts/jenkins <master>$ kubectl get po
NAME                                  READY   STATUS    RESTARTS   AGE
alpine-deployment-5956b7fbf9-226ng    1/1     Running   0          38m
frontend-f7d9c57d4-ffx6n              1/1     Running   0          38m
frontend-f7d9c57d4-sjc52              1/1     Running   0          38m
frontend-f7d9c57d4-tdcjq              1/1     Running   0          38m
my-release-jenkins-0                  1/2     Running   0          48s
sarahkossmann@Sarahs-MacBook-Pro:helm-charts/jenkins <master>$ kubectl get svc my-release-jenkins
NAME                TYPE        CLUSTER-IP      EXTERNAL-IP   PORT(S)    AGE
my-release-jenkins  ClusterIP   10.110.32.26    <none>        8080/TCP   22m
sarahkossmann@Sarahs-MacBook-Pro:helm-charts/jenkins <master>$ kubectl exec --namespace default -it svc/my-release-jenkins -c jenkins -- /bin/cat /run/secrets/additional/chart-admin-password && echo
0adidd1ezpTLL5VbhyhCYn
sarahkossmann@Sarahs-MacBook-Pro:helm-charts/jenkins <master>$ echo http://127.0.0.1:8080
  kubectl --namespace default port-forward svc/my-release-jenkins 8080:8080
http://127.0.0.1:8080
Forwarding from 127.0.0.1:8080 -> 8080
Forwarding from [::1]:8080 -> 8080
Handling connection for 8080
Handling connection for 8080
```

2. Create a jenkins job using the pod template plugin to run an ubuntu pod and use it to run the command: df -h

Console output:

```
Started by user Jenkins Admin

[Pipeline] Start of Pipeline
[Pipeline] podTemplate
[Pipeline] {
[Pipeline] node
Created Pod: kubernetes default/jenkins-agent-6q9g7
Still waiting to schedule task
‘jenkins-agent-6q9g7

’ is offline
Agent jenkins-agent-6q9g7

 is provisioned from template java.text.SimpleDateFormat@b93b42a0-tnx4m
---
apiVersion: "v1"
kind: "Pod"
metadata:
  annotations:
    buildUrl: "http://my-release-jenkins.default.svc.cluster.local:8080/job/test/8/"
    runUrl: "job/test/8/"
  labels:
    jenkins/my-release-jenkins-agent: "true"
    jenkins/label-digest: "eab0babad061becaa6dc2255f7cb5888a380e238"
    jenkins/label: "java.text.SimpleDateFormat_b93b42a0"
  name: "jenkins-agent-6q9g7"
  namespace: "default"
spec:
  containers:
  - command:
    - "cat"
    image: "ubuntu"
    imagePullPolicy: "IfNotPresent"
    name: "ubuntu"
    resources:
      limits: {}
      requests: {}
    tty: true
    volumeMounts:
    - mountPath: "/home/jenkins/agent"
      name: "workspace-volume"
      readOnly: false
  - env:
    - name: "JENKINS_SECRET"
      value: "********"
    - name: "JENKINS_TUNNEL"
      value: "my-release-jenkins-agent.default.svc.cluster.local:50000"
    - name: "JENKINS_AGENT_NAME"
      value: "jenkins-agent-6q9g7"
    - name: "JENKINS_NAME"
      value: "jenkins-agent-6q9g7"
```

```
    - name: "JENKINS_AGENT_WORKDIR"
      value: "/home/jenkins/agent"
    - name: "JENKINS_URL"
      value: "http://my-release-jenkins.default.svc.cluster.local:8080/"
    image: "jenkins/inbound-agent:4.11-1-jdk11"
    name: "jnlp"
    resources:
      limits: {}
      requests:
        memory: "256Mi"
        cpu: "100m"
    volumeMounts:
    - mountPath: "/home/jenkins/agent"
      name: "workspace-volume"
      readOnly: false
  nodeSelector:
    kubernetes.io/os: "linux"
  restartPolicy: "Never"
  volumes:
  - emptyDir:
      medium: ""
    name: "workspace-volume"

Running on jenkins-agent-6q9g7

 in /home/jenkins/agent/workspace/test
[Pipeline] {
[Pipeline] stage
[Pipeline] { (Memory)
[Pipeline] sh
+ df -h
Filesystem      Size  Used Avail Use% Mounted on
overlay          17G   12G  4.6G  72% /
tmpfs            64M     0   64M   0% /dev
tmpfs           1.9G     0  1.9G   0% /sys/fs/cgroup
/dev/sda1        17G   12G  4.6G  72% /etc/hosts
shm              64M     0   64M   0% /dev/shm
tmpfs           3.8G   12K  3.8G   1% /run/secrets/kubernetes.io/serviceaccount
tmpfs           1.9G     0  1.9G   0% /proc/acpi
tmpfs           1.9G     0  1.9G   0% /proc/scsi
tmpfs           1.9G     0  1.9G   0% /sys/firmware
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // node
[Pipeline] }
[Pipeline] // podTemplate
[Pipeline] End of Pipeline
Finished: SUCCESS
```