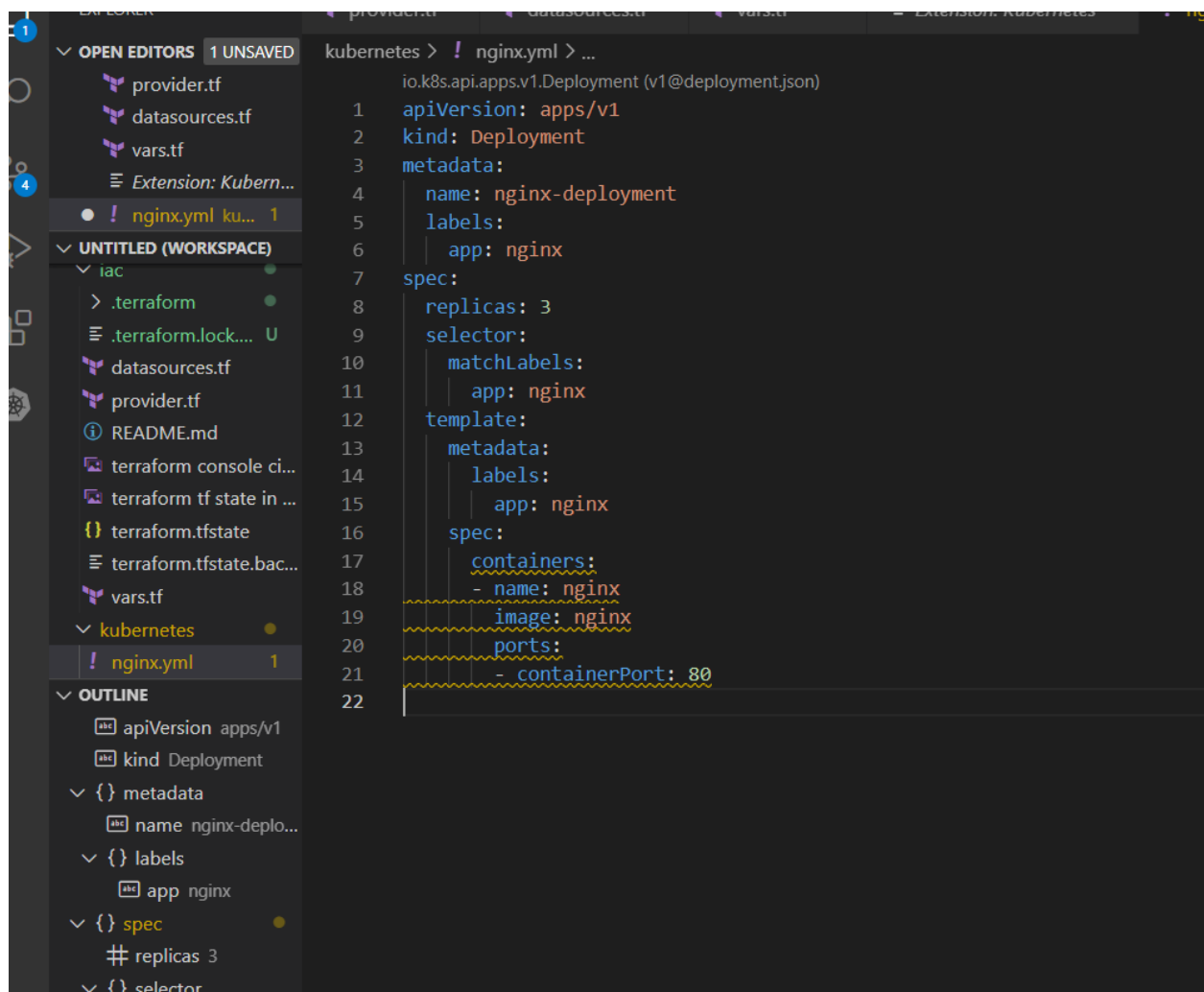


Kubernetes Deployments

```
Last login: Mon Dec  6 10:36:48 2021 from 49.37.217.160
ubuntu@master:~$ kubectl get nodes
NAME        STATUS    ROLES                  AGE      VERSION
master      Ready     control-plane,master   26h      v1.21.0
worker      Ready     <none>                 5m31s    v1.21.0
worker1     Ready     <none>                 18m      v1.21.0
ubuntu@master:~$
```



The screenshot shows the VS Code editor interface with a file explorer on the left and a code editor on the right. The file explorer shows a project structure with folders like 'provider.tf', 'datasources.tf', 'vars.tf', 'Extension: Kubern...', 'nginx.yml', 'UNTITLED (WORKSPACE)', 'iac', 'terraform', 'terraform console ci...', 'terraform tf state in ...', 'terraform.tfstate', 'terraform.tfstate.bac...', 'vars.tf', 'kubernetes', and 'nginx.yml'. The code editor shows the content of 'nginx.yml' with the following YAML:

```
io.k8s.api.apps.v1.Deployment (v1@deployment.json)
1  apiVersion: apps/v1
2  kind: Deployment
3  metadata:
4    name: nginx-deployment
5    labels:
6      app: nginx
7  spec:
8    replicas: 3
9    selector:
10     matchLabels:
11       app: nginx
12    template:
13     metadata:
14       labels:
15         app: nginx
16     spec:
17       containers:
18         - name: nginx
19           image: nginx
20           ports:
21             - containerPort: 80
22
```

The Outline view on the left shows the structure of the manifest:

- apiVersion apps/v1
- kind Deployment
- metadata
 - name nginx-deplo...
- labels
 - app nginx
- spec
 - replicas 3
 - selector

```
ubuntu@master:~$ kubectl apply -f nginx.yml
deployment.apps/nginx-deployment created
ubuntu@master:~$ kubectl get po
NAME                                READY   STATUS    RESTARTS   AGE
nginx-deployment-7848d4b86f-4wvlh  1/1     Running   0           17s
nginx-deployment-7848d4b86f-8fh68  1/1     Running   0           17s
nginx-deployment-7848d4b86f-x5pqz   1/1     Running   0           18s
ubuntu@master:~$
```

```
ubuntu@master:~$ kubectl get po -o wide
NAME                                READY   STATUS    RESTARTS   AGE   IP            NODE       NOMINATED NODE   READINESS GATES
nginx-deployment-7848d4b86f-4wvlh  1/1     Running   0           47s   10.44.0.1     worker1    <none>            <none>
nginx-deployment-7848d4b86f-8fh68  1/1     Running   0           47s   10.44.0.2     worker1    <none>            <none>
nginx-deployment-7848d4b86f-x5pqz   1/1     Running   0           48s   10.36.0.1     worker     <none>            <none>
ubuntu@master:~$
```

```
nginx-deployment-7848d4b86f-x5pqz   1/1     Running   0           18s
ubuntu@master:~$ kubectl get po -o wide
NAME                                READY   STATUS    RESTARTS   AGE   IP            NODE       NOMINATED NODE   READINESS GATES
nginx-deployment-7848d4b86f-4wvlh  1/1     Running   0           47s   10.44.0.1     worker1    <none>            <none>
nginx-deployment-7848d4b86f-8fh68  1/1     Running   0           47s   10.44.0.2     worker1    <none>            <none>
nginx-deployment-7848d4b86f-x5pqz   1/1     Running   0           48s   10.36.0.1     worker     <none>            <none>
ubuntu@master:~$ kubectl get deployment
NAME          READY   UP-TO-DATE   AVAILABLE   AGE
nginx-deployment  3/3      3             3           103s
ubuntu@master:~$
```

Creating a service

```
io.k8s.api.core.v1.Service (v1@service.json)
1  apiVersion: v1
2  kind: Service
3  metadata:
4    name: nginx-service
5  spec:
6    selector:
7      app: nginx
8    ports:
9      - port: 8080
0    targetPort: 80
```

```

Last login: Mon Dec 6 10:44:52 2021 from 49.37.217.100
ubuntu@master:~$ vi nginxservice.yml
ubuntu@master:~$ kubectl apply -f nginxservice.yml
service/nginx-service created
ubuntu@master:~$

```

```

ubuntu@master:~$ kubectl get svc
NAME                TYPE        CLUSTER-IP    EXTERNAL-IP    PORT(S)    AGE
kubernetes          ClusterIP   10.96.0.1     <none>         443/TCP    26h
nginx-service        ClusterIP   10.104.196.68 <none>         8080/TCP    23s
ubuntu@master:~$

```

```

ubuntu@master:~$ kubectl get svc
NAME                TYPE        CLUSTER-IP    EXTERNAL-IP    PORT(S)    AGE
kubernetes          ClusterIP   10.96.0.1     <none>         443/TCP    26h
nginx-service        ClusterIP   10.104.196.68 <none>         8080/TCP    23s
ubuntu@master:~$ kubectl describe svc nginx-service
Name:               nginx-service
Namespace:          default
Labels:             <none>
Annotations:        <none>
Selector:           app=nginx
Type:               ClusterIP
IP Family Policy:   SingleStack
IP Families:        IPv4
IP:                 10.104.196.68
IPs:                10.104.196.68
Port:               <unset> 8080/TCP
TargetPort:         80/TCP
Endpoints:          10.36.0.1:80,10.44.0.1:80,10.44.0.2:80
Session Affinity:   None
Events:             <none>
ubuntu@master:~$ kubectl get po
NAME                                READY    STATUS    RESTARTS    AGE
nginx-deployment-7848d4b86f-4wvlh   1/1      Running   0            10m
nginx-deployment-7848d4b86f-8fh68   1/1      Running   0            10m
nginx-deployment-7848d4b86f-x5pqz   1/1      Running   0            10m
ubuntu@master:~$ kubectl get po -o wide
NAME                                READY    STATUS    RESTARTS    AGE    IP            NODE        NOMINATED NODE    READINESS GATES
nginx-deployment-7848d4b86f-4wvlh   1/1      Running   0            10m    10.44.0.1     worker1     <none>             <none>
nginx-deployment-7848d4b86f-8fh68   1/1      Running   0            10m    10.44.0.2     worker1     <none>             <none>
nginx-deployment-7848d4b86f-x5pqz   1/1      Running   0            10m    10.36.0.1     worker     <none>             <none>
ubuntu@master:~$

```

Increase the replica count

```

ubuntu@master:~$ kubectl get deployment
NAME                READY    UP-TO-DATE    AVAILABLE    AGE
nginx-deployment    3/3      3              3            16m
ubuntu@master:~$ kubectl scale deployment nginx-deployment --replicas=4
deployment.apps/nginx-deployment scaled
ubuntu@master:~$ kubectl get po
NAME                                READY    STATUS    RESTARTS    AGE
nginx-deployment-7848d4b86f-4wvlh   1/1      Running   0            16m
nginx-deployment-7848d4b86f-8fh68   1/1      Running   0            16m
nginx-deployment-7848d4b86f-ggbwk   1/1      Running   0            14s
nginx-deployment-7848d4b86f-x5pqz   1/1      Running   0            16m
ubuntu@master:~$

```

```
ubuntu@master:~$ kubectl scale deployment nginx-deployment --replicas=3
deployment.apps/nginx-deployment scaled
ubuntu@master:~$ kubectl get po
```

NAME	READY	STATUS	RESTARTS	AGE
nginx-deployment-7848d4b86f-4wvlh	1/1	Running	0	17m
nginx-deployment-7848d4b86f-8fh68	1/1	Running	0	17m
nginx-deployment-7848d4b86f-ggbwk	0/1	Terminating	0	72s
nginx-deployment-7848d4b86f-x5pqz	1/1	Running	0	17m

```
ubuntu@master:~$
```

```
ubuntu@master:~$ kubectl scale deployment nginx-deployment --replicas=5 --record
deployment.apps/nginx-deployment scaled
ubuntu@master:~$ kubectl get po
```

NAME	READY	STATUS	RESTARTS	AGE
nginx-deployment-7848d4b86f-4wvlh	1/1	Running	0	19m
nginx-deployment-7848d4b86f-8fh68	1/1	Running	0	19m
nginx-deployment-7848d4b86f-jt6bn	0/1	ContainerCreating	0	3s
nginx-deployment-7848d4b86f-smmt2	1/1	Running	0	3s
nginx-deployment-7848d4b86f-x5pqz	1/1	Running	0	19m

```
ubuntu@master:~$ kubectl scale deployment nginx-deployment --replicas=3 --record
deployment.apps/nginx-deployment scaled
ubuntu@master:~$ kubectl get po
```

NAME	READY	STATUS	RESTARTS	AGE
nginx-deployment-7848d4b86f-4wvlh	0/1	Terminating	0	19m
nginx-deployment-7848d4b86f-8fh68	1/1	Running	0	19m
nginx-deployment-7848d4b86f-jt6bn	1/1	Running	0	15s
nginx-deployment-7848d4b86f-smmt2	0/1	Terminating	0	15s
nginx-deployment-7848d4b86f-x5pqz	1/1	Running	0	19m

```
ubuntu@master:~$
```

```

ubuntu@master:~$ kubectl scale deployment nginx-deployment --replicas=5 --record
deployment.apps/nginx-deployment scaled
ubuntu@master:~$ kubectl get po
NAME                                READY   STATUS              RESTARTS   AGE
nginx-deployment-7848d4b86f-4wvlh   1/1     Running             0           19m
nginx-deployment-7848d4b86f-8fh68   1/1     Running             0           19m
nginx-deployment-7848d4b86f-jt6bn   0/1     ContainerCreating   0           3s
nginx-deployment-7848d4b86f-smmt2   1/1     Running             0           3s
nginx-deployment-7848d4b86f-x5pqz   1/1     Running             0           19m
ubuntu@master:~$ kubectl scale deployment nginx-deployment --replicas=3 --record
deployment.apps/nginx-deployment scaled
ubuntu@master:~$ kubectl get po
NAME                                READY   STATUS              RESTARTS   AGE
nginx-deployment-7848d4b86f-4wvlh   0/1     Terminating       0           19m
nginx-deployment-7848d4b86f-8fh68   1/1     Running             0           19m
nginx-deployment-7848d4b86f-jt6bn   1/1     Running             0           15s
nginx-deployment-7848d4b86f-smmt2   0/1     Terminating       0           15s
nginx-deployment-7848d4b86f-x5pqz   1/1     Running             0           19m
ubuntu@master:~$ kubectl rollout history deployment nginx-deployment
deployment.apps/nginx-deployment
REVISION  CHANGE-CAUSE
1          kubectl scale deployment nginx-deployment --replicas=3 --record=true
ubuntu@master:~$ █

```