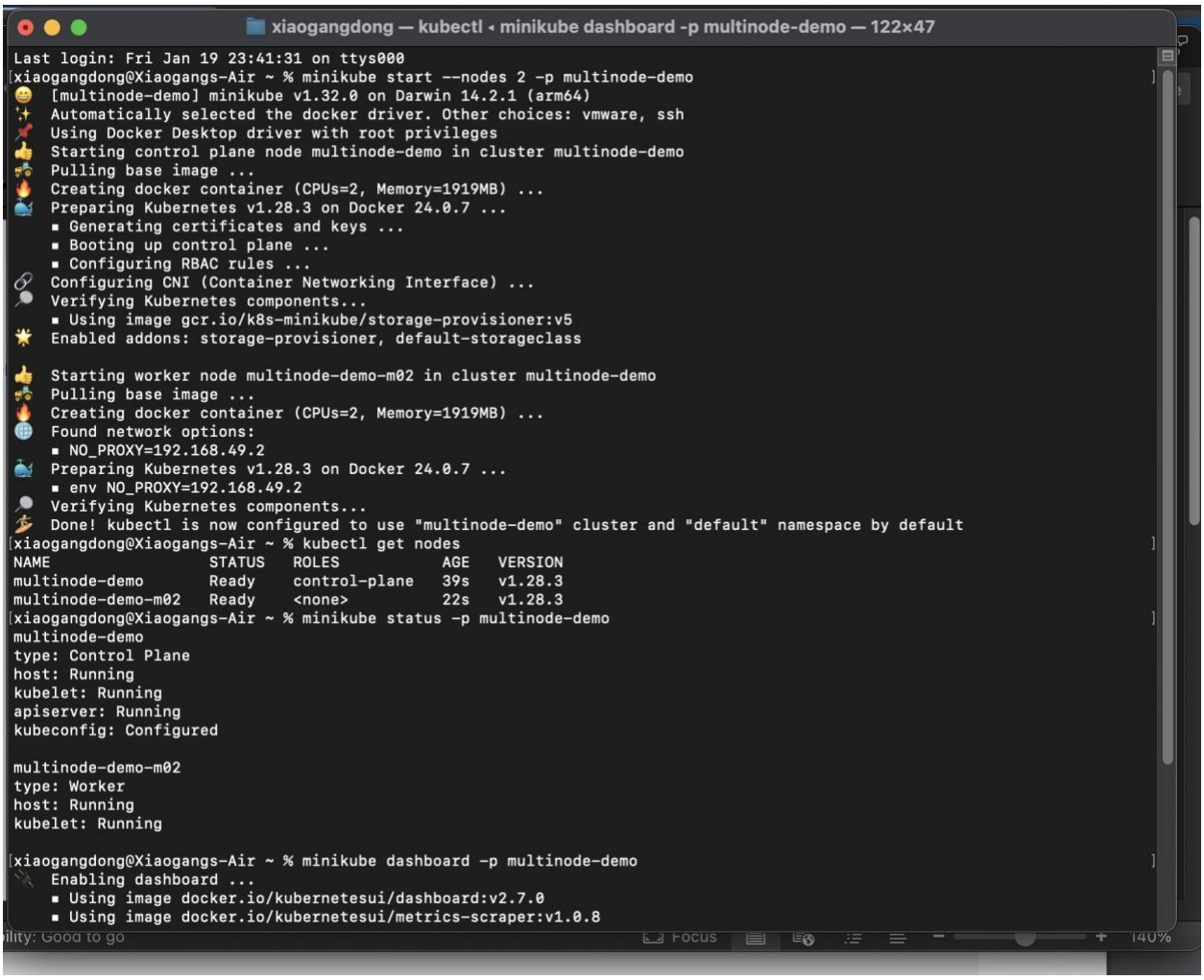
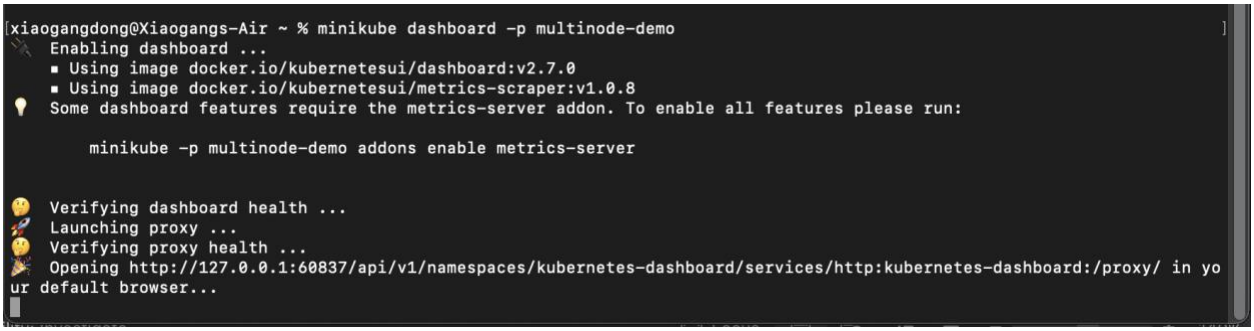
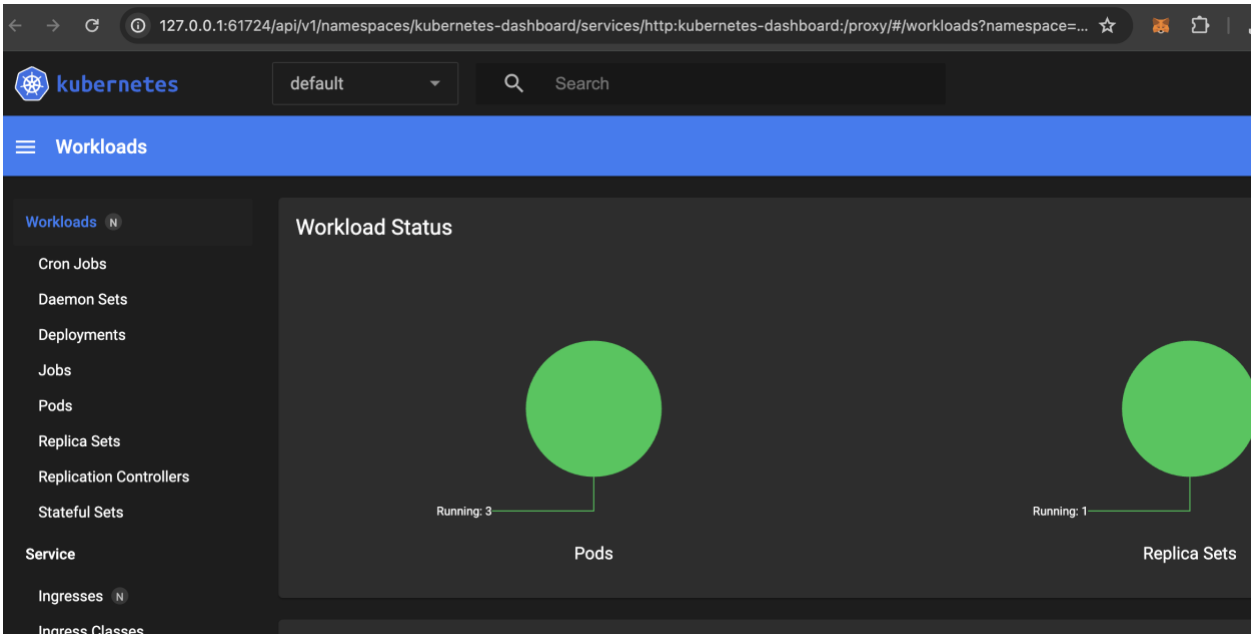
Deployment: start two nodes and check the status







kubectl apply -f replicaset.yaml

kubectl get pods

```
xiaogangdong@Xiaogangs-Air Lab 3 % kubectl apply -f replicaset.yaml
replicaset.apps/nginx created
xiaogangdong@Xiaogangs-Air Lab 3 % kubectl get pods
NAME          READY   STATUS    RESTARTS   AGE
nginx-9wlwt   1/1     Running   0          9s
nginx-dkct6   1/1     Running   0          9s
nginx-vkz4p   1/1     Running   0          9s
xiaogangdong@Xiaogangs-Air Lab 3 %
```

replicaset.yaml

Users > xiaogangdong > Projects > BCDV4032 SCALABLE > Lab 3 > ! replicaset.yaml

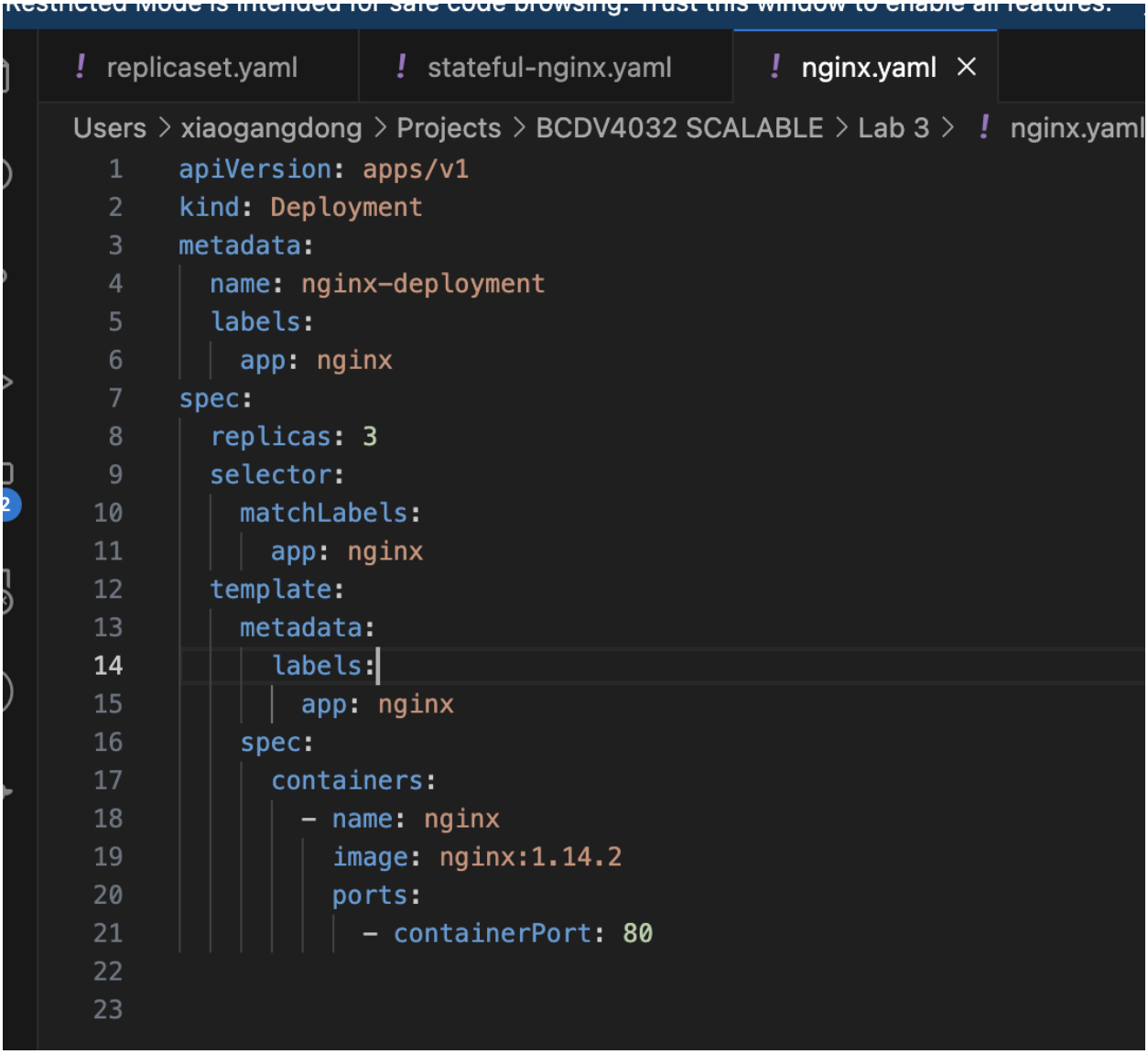
```yaml
apiVersion: apps/v1
kind: ReplicaSet
metadata:
  name: nginx
  labels:
    app: nginx
    tier: lb
spec:
  replicas: 3
  selector:
    matchLabels:
      tier: lb
  template:
    metadata:
      labels:
        tier: lb
    spec:
      containers:
        - name: nginx-replicaset
          image: nginx

```

Kubenets delete pod, get pods, and get replicasets:

```
nginx-vkz4p   1/1     Running   0          9s
xiaogangdong@Xiaogangs-Air Lab 3 % kubectl delete pod nginx-vkz4p
pod "nginx-vkz4p" deleted
xiaogangdong@Xiaogangs-Air Lab 3 % kubectl get pods
NAME          READY   STATUS    RESTARTS   AGE
nginx-9wlwt   1/1     Running   0          2m29s
nginx-dkct6   1/1     Running   0          2m29s
nginx-h8xm5   1/1     Running   0          6s
xiaogangdong@Xiaogangs-Air Lab 3 % kubectl get replicasets
NAME    DESIRED   CURRENT   READY   AGE
nginx   3         3         3       2m33s
xiaogangdong@Xiaogangs-Air Lab 3 %
```

Apply nginx.yaml

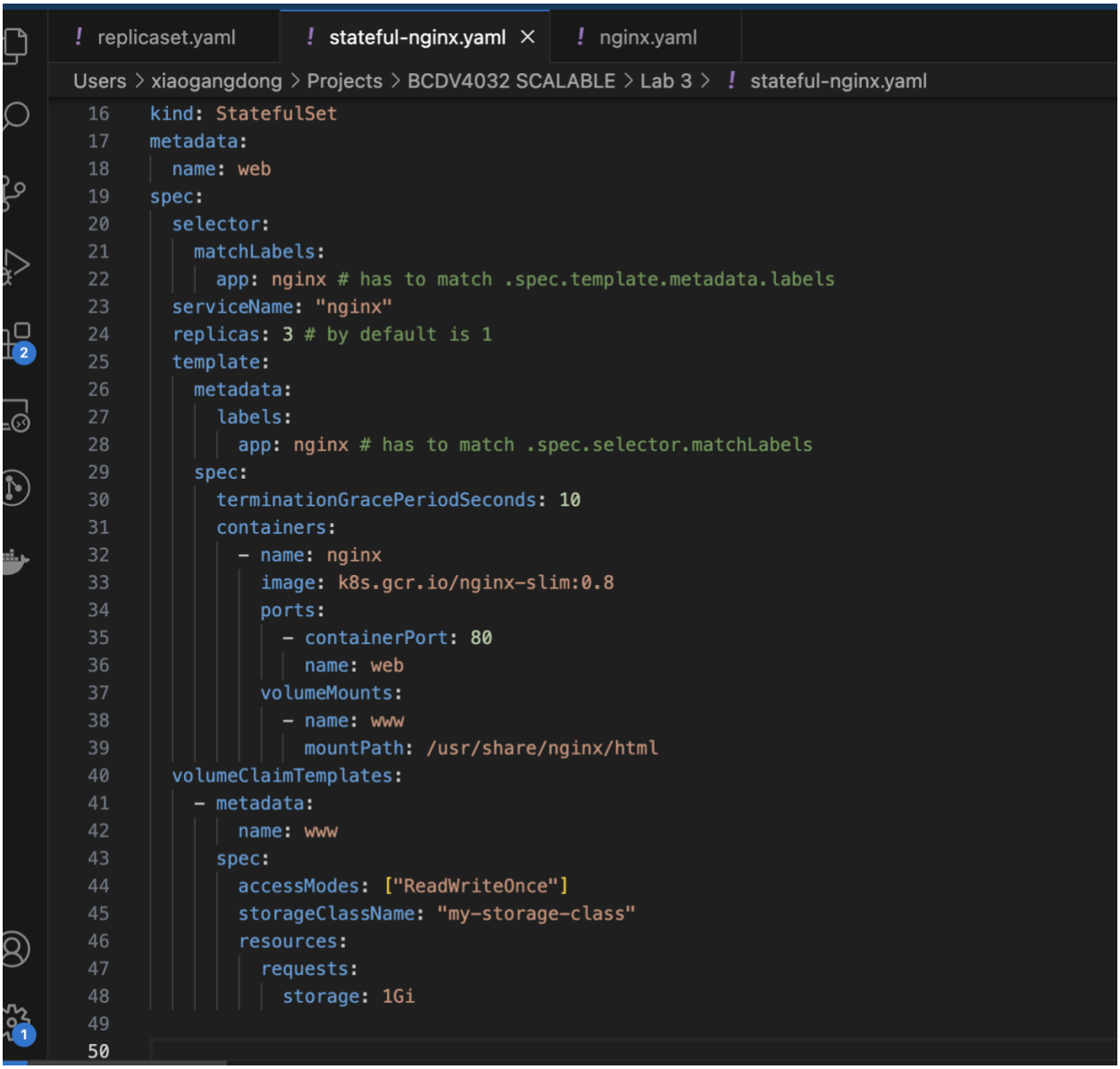



```
xiaogangdong@Xiaogangs-Air Lab 3 % Kubectl apply -f nginx.yaml
deployment.apps/nginx-deployment created
xiaogangdong@Xiaogangs-Air Lab 3 % kubectl get deployments
NAME               READY   UP-TO-DATE   AVAILABLE   AGE
nginx-deployment   3/3     3            3           28s
xiaogangdong@Xiaogangs-Air Lab 3 % kubectl rollout status deployment nginx
Error from server (NotFound): deployments.apps "nginx" not found
xiaogangdong@Xiaogangs-Air Lab 3 % kubectl rollout status deployment nginx-deployment
deployment "nginx-deployment" successfully rolled out
xiaogangdong@Xiaogangs-Air Lab 3 %
```

kubectl apply -f stateful-nginx.yaml

kubectl get statefulsets

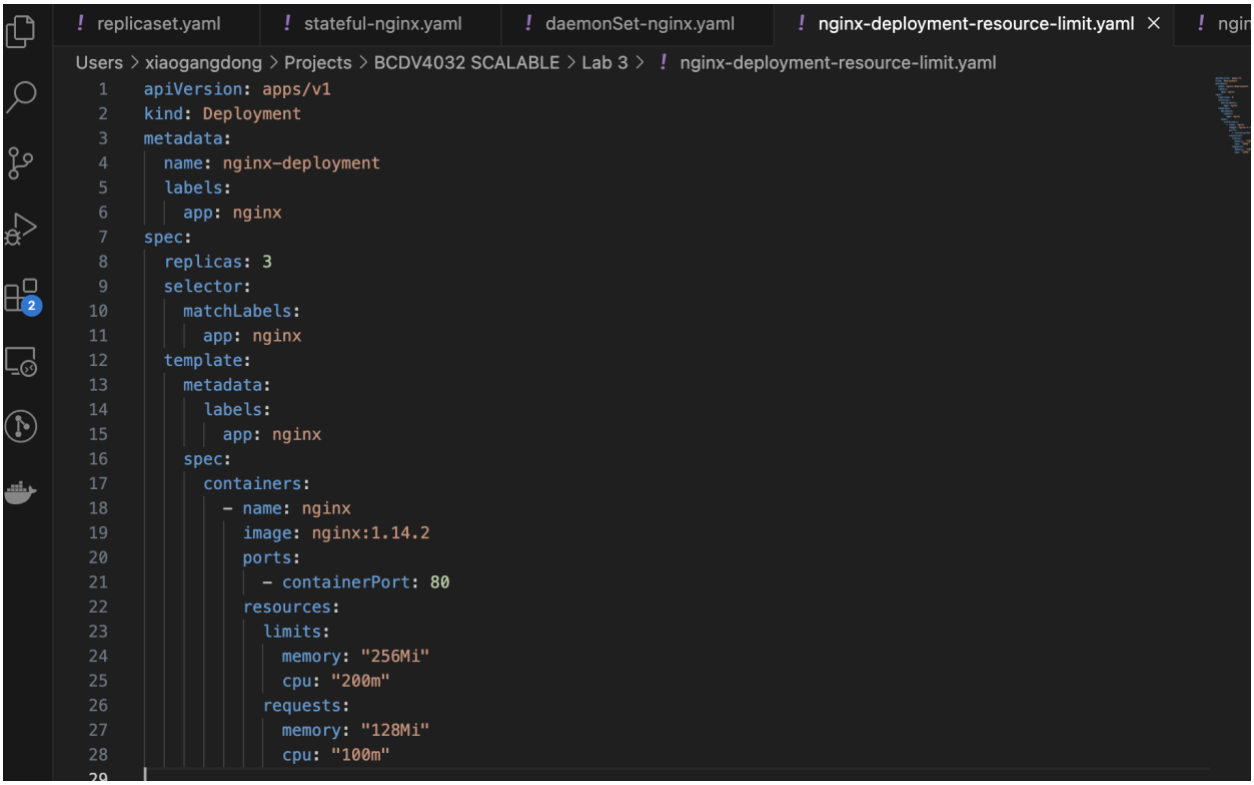
```
xiaogangdong@Xiaogangs-Air Lab 3 % kubectl apply -f stateful-nginx.yaml
service/nginx created
statefulset.apps/web created
xiaogangdong@Xiaogangs-Air Lab 3 % kubectl get statefulsets
NAME   READY   AGE
web    0/3     6s
xiaogangdong@Xiaogangs-Air Lab 3 %
```



kubectl apply -f daemonSet-nginx.yaml

kubectl get daemonset

kubectl apply -f nginx-deployment-resource-limit.yaml



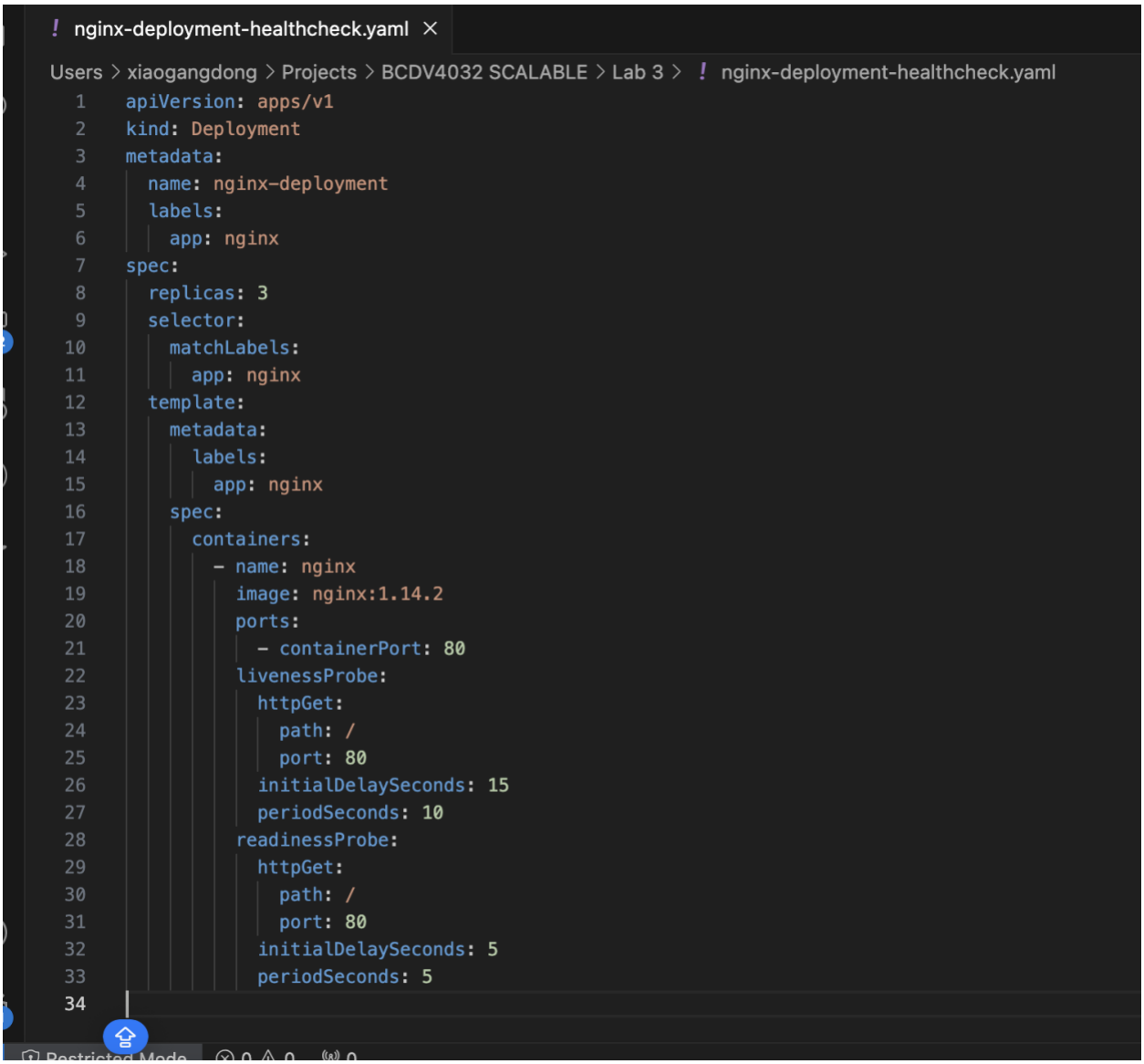

```
xiaogangdong@Xiaogangs-Air Lab 3 % kubectl apply -f daemonSet-nginx.yaml
daemonset.apps/nginx created
xiaogangdong@Xiaogangs-Air Lab 3 % kubectl get daemonset
NAME    DESIRED   CURRENT   READY   UP-TO-DATE   AVAILABLE   NODE SELECTOR   AGE
nginx   2         2         2       2            2           <none>          4s
xiaogangdong@Xiaogangs-Air Lab 3 % kubectl apply -f nginx-deployment-resource-limit.yaml
deployment.apps/nginx-deployment configured
xiaogangdong@Xiaogangs-Air Lab 3 % kubectl get deployments
NAME               READY   UP-TO-DATE   AVAILABLE   AGE
nginx-deployment   3/3     3            3           42m
xiaogangdong@Xiaogangs-Air Lab 3 %
```

kubectl apply -f nginx-deployment-healthcheck.yaml

get deployments

```
xiaogangdong@Xiaogangs-Air Lab 3 % kubectl apply -f nginx-deployment-healthcheck.yaml
deployment.apps/nginx-deployment configured
xiaogangdong@Xiaogangs-Air Lab 3 % kubectl get deployments
NAME               READY   UP-TO-DATE   AVAILABLE   AGE
nginx-deployment   3/3     2            3           45m
xiaogangdong@Xiaogangs-Air Lab 3 %
```

F



Full stack application:

```
xiaogangdong@Xiaogangs-Air Lab 3 % minikube start

😄  minikube v1.32.0 on Darwin 14.2.1 (arm64)
✨  Automatically selected the docker driver. Other choices: vmware, ssh
📌  Using Docker Desktop driver with root privileges
👍  Starting control plane node minikube in cluster minikube
🚜  Pulling base image ...
🔥  Creating docker container (CPUs=2, Memory=1919MB) ...
🐳  Preparing Kubernetes v1.28.3 on Docker 24.0.7 ...
    ▪ Generating certificates and keys ...
    ▪ Booting up control plane ...
    ▪ Configuring RBAC rules ...
🔗  Configuring bridge CNI (Container Networking Interface) ...
🔎  Verifying Kubernetes components...
    ▪ Using image gcr.io/k8s-minikube/storage-provisioner:v5
🌟  Enabled addons: storage-provisioner, default-storageclass
🏄  Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default
xiaogangdong@Xiaogangs-Air Lab 3 % kubectl config view
apiVersion: v1
clusters:
- cluster:
    certificate-authority: /Users/xiaogangdong/.minikube/ca.crt
    extensions:
    - extension:
        last-update: Sat, 20 Jan 2024 13:25:15 EST
        provider: minikube.sigs.k8s.io
        version: v1.32.0
      name: cluster_info
    server: https://127.0.0.1:50702
  name: minikube
- cluster:
    certificate-authority: /Users/xiaogangdong/.minikube/ca.crt
    extensions:
    - extension:
        last-update: Sat, 20 Jan 2024 00:22:52 EST
        provider: minikube.sigs.k8s.io
        version: v1.32.0
      name: cluster_info
    server: https://127.0.0.1:61628
  name: multinode-demo
```

```
    user: multinode-demo
  name: multinode-demo
current-context: minikube
kind: Config
preferences: {}
users:
- name: minikube
  user:
    client-certificate: /Users/xiaogangdong/.minikube/profiles/minikube/client.crt
    client-key: /Users/xiaogangdong/.minikube/profiles/minikube/client.key
- name: multinode-demo
  user:
    client-certificate: /Users/xiaogangdong/.minikube/profiles/multinode-demo/client.crt
    client-key: /Users/xiaogangdong/.minikube/profiles/multinode-demo/client.key
xiaogangdong@Xiaogangs-Air Lab 3 % kubectl apply -f mongodb-secret.yml
secret/mongodb-secret created
xiaogangdong@Xiaogangs-Air Lab 3 % kubectl apply -f stateful-sets/mongodb-stateful-set.yml
error: the path "stateful-sets/mongodb-stateful-set.yml" does not exist
xiaogangdong@Xiaogangs-Air Lab 3 % kubectl apply -f stateful-sets/mongodb-stateful-set.yml
statefulset.apps/mongodb-stateful-set created
xiaogangdong@Xiaogangs-Air Lab 3 % kubectl apply -f services/mongodb-service.yml
service/mongodb-service created
xiaogangdong@Xiaogangs-Air Lab 3 % kubectl apply -f deployments/note-server-depl.yml
deployment.apps/note-server-deployment created
xiaogangdong@Xiaogangs-Air Lab 3 % kubectl apply -f services/note-server-service.yml
service/note-server-service created
xiaogangdong@Xiaogangs-Air Lab 3 % kubectl apply -f deployments/note-depl.yml
deployment.apps/note-deployment created
xiaogangdong@Xiaogangs-Air Lab 3 % kubectl apply -f services/note-service.yml
service/note-service created
xiaogangdong@Xiaogangs-Air Lab 3 % minikube service note-service
❗  Executing "docker container inspect minikube --format={{.State.Status}}" took an unusually long time: 22.689151541s
💡  Restarting the docker service may improve performance.
🤷  This control plane is not running! (state=Stopped)
❗  This is unusual - you may want to investigate using "minikube logs"
👉  To start a cluster, run: "minikube start"
```

Task: delete a pod

```
xiaogangdong@Xiaogangs-Air Lab 3 % kubectl get pods
NAME                                    READY   STATUS              RESTARTS   AGE
mongodb-stateful-set-0                  1/1     Running             0          15m
note-deployment-74cc946cd8-54m5r        0/1     ContainerCreating   0          14m
note-deployment-74cc946cd8-wj874        0/1     ContainerCreating   0          14m
note-server-deployment-6fb5fcb67f-5xxvw   0/1     ContainerCreating   0          15m
note-server-deployment-6fb5fcb67f-rf66l   1/1     Running             0          15m
xiaogangdong@Xiaogangs-Air Lab 3 % kubectl delete pod note-deployment-74cc946cd8-54m5r
pod "note-deployment-74cc946cd8-54m5r" deleted
```