

□□ Docker □ Kubernetes

□□ Nginx □□

□□□□□□□□

Docker □ Kubernetes (k8s) □□□□□

Nginx □□

1. □□□□

1.1 □□□□

- □□ Docker
- □□ Kubernetes □ (Minikube □□□□ k8s)
- kubectl □□□□

2. □□ Nginx Docker □□

2.1 □□□ Nginx Dockerfile

```
# Dockerfile
FROM nginx:latest

# □□□□□□
COPY nginx.conf /etc/nginx/nginx.conf
COPY conf.d/ /etc/nginx/conf.d/

# □□□□
EXPOSE 80 443

# □□□□
CMD ["nginx", "-g", "daemon off;"]
```



```
docker build -t my-nginx:1.0 .
```

3. Kubernetes Nginx

3.1 Deployment

```
# nginx-deployment.yaml
apiVersion: apps/v1
kind: Deployment
metadata:
  name: nginx-deployment
  labels:
    app: nginx
spec:
  replicas: 3
  selector:
    matchLabels:
      app: nginx
  template:
    metadata:
      labels:
        app: nginx
    spec:
      containers:
        - name: nginx
          image: my-nginx:1.0
          ports:
            - containerPort: 80
      resources:
        requests:
          cpu: "100m"
          memory: "128Mi"
        limits:
          cpu: "500m"
          memory: "512Mi"
```

```
livenessProbe:
  httpGet:
    path: /
    port: 80
  initialDelaySeconds: 30
  periodSeconds: 10
readinessProbe:
  httpGet:
    path: /
    port: 80
  initialDelaySeconds: 5
  periodSeconds: 5
```

```
□□□□
```

```
kubectl apply -f nginx-deployment.yaml
```

3.2 □□ Service


```
# nginx-service.yaml
apiVersion: v1
kind: Service
metadata:
  name: nginx-service
spec:
  selector:
    app: nginx
  ports:
    - protocol: TCP
      port: 80
      targetPort: 80
  type: LoadBalancer
```

```
□□ Service□
```

```
kubectl apply -f nginx-service.yaml
```

4.

4.1 (HPA)

```
#  HPA
kubectl autoscale deployment nginx-deployment --cpu-percent=50 --min=2 --max=10
```

4.2 ConfigMap

```
# nginx-configmap.yaml
apiVersion: v1
kind: ConfigMap
metadata:
  name: nginx-config
data:
  nginx.conf: |
    user nginx;
    worker_processes auto;

    events {
      worker_connections 1024;
    }

    http {
      include /etc/nginx/mime.types;
      default_type application/octet-stream;

      server {
        listen 80;
        server_name localhost;

        location / {
          root /usr/share/nginx/html;
          index index.html index.htm;
        }
      }
    }
  }
```

```
}
```

Deployment ConfigMap

```
# deployment containers
volumeMounts:
- name: nginx-config
  mountPath: /etc/nginx/nginx.conf
  subPath: nginx.conf
volumes:
- name: nginx-config
  configMap:
    name: nginx-config
```

4.3 Ingress

```
# nginx-ingress.yaml
apiVersion: networking.k8s.io/v1
kind: Ingress
metadata:
  name: nginx-ingress
  annotations:
    nginx.ingress.kubernetes.io/rewrite-target: /
spec:
  rules:
  - host: example.com
    http:
      paths:
      - path: /
        pathType: Prefix
      backend:
        service:
          name: nginx-service
          port:
            number: 80
```

5.

5.1 Pod

```
kubectl get pods -l app=nginx
```

5.2

```
kubectl logs -f <pod-name>
```

5.3

```
kubectl top pods -l app=nginx
```

6.

1. Docker Hub
2. Pod
- 3.

```
strategy:  
  type: RollingUpdate  
  rollingUpdate:  
    maxSurge: 1  
    maxUnavailable: 0
```

- 4.
5. Pod
6. TLS Ingress HTTPS

7.

```
kubectl delete deployment nginx-deployment  
kubectl delete service nginx-service  
kubectl delete ingress nginx-ingress  
kubectl delete configmap nginx-config
```

Revision #1

Created 27 May 2025 05:56:37 by Admin

Updated 30 May 2025 01:16:17 by Admin