

# Minikube + Kubectl Cheatsheet (Workflow thực tế)

## 1 Khởi tạo cluster Minikube

```
minikube start -p khecluster --nodes=2 --cpus=4 --memory=8g --driver=docker
minikube status -p khecluster
minikube ip -p khecluster
minikube dashboard -p khecluster
```

## 2 Tạo namespace

```
kubectl create ns khens
kubectl get ns
```

## 3 Tạo Pod / Deployment

```
# Pod test nhanh
kubectl run nginx1 -n khens --image=lamluongkhe/nginx:3.0 --port=80 --
restart=Never --command -- /opt/nginx/sbin/nginx -g 'daemon off;'

# Deployment từ YAML
kubectl apply -f nginx-deployment.yaml
kubectl get deployments -n khens
kubectl get pods -n khens
```

## 4 Debug Pod / Logs

```
kubectl logs <pod> -n khens
kubectl logs -f <pod> -n khens
kubectl describe pod <pod> -n khens
kubectl exec -it <pod> -n khens -- /bin/sh
```

## 5 Scale / Rollout

```
kubectl scale deployment nginx-deployment --replicas=3 -n khens
kubectl rollout status deployment nginx-deployment -n khens
kubectl rollout undo deployment nginx-deployment -n khens
```

## 6 Service / Networking

```
# Expose Pod
kubectl expose pod nginx1 --type=NodePort --port=80 --target-port=80 -n khens
```

#### # Expose Deployment

```
kubectl expose deployment nginx-deployment --type=NodePort --port=8080 --target-port=80 -n khens
```

#### # Xem service details

```
kubectl describe svc nginx-service -n khens
```

#### # Mở NodePort service trên browser

```
minikube service nginx-service -n khens -p khecluster
```

## 7 Các lệnh hữu ích khác

```
minikube ssh -p khecluster      # SSH vào node
minikube logs -p khecluster     # Log toàn cluster
kubectl get all -n khens       # Xem tất cả resources
kubectl top pod -n khens       # Xem resource usage pods
kubectl top node                # Xem resource usage nodes
kubectl edit deployment nginx-deployment -n khens # Edit trực tiếp deployment
```

## 8 Trường hợp thực tế

- Pod CrashLoopBackOff: Kiểm tra logs + describe
- Pod Completed ngay: CMD không chạy foreground, fix `daemon off;`
- NodePort không mở ngoài máy host: dùng `minikube ip` + NodePort hoặc `minikube tunnel`
- Update image hoặc replicas: `kubectl edit deployment` hoặc `kubectl scale`