

KUBERNETES FROM ZERO · FOUNDATIONS 8 OF 12 · LESSON 8 · LESSON KIT · ANSWER KEY

Kubernetes from Zero, part 8: Services

The answers to the homework sheet, matched by exercise number. Every answer comes from the lesson. Names with random suffixes will differ on your cluster.

Every command ran on a kind v0.33.0 cluster (node v1.37.0, kubectl v1.37.2) on 10 Nov 2026. Cluster: k8s-ep07.

Recall

1. What does a Service give a set of Pods, and what picks the Pods?

   One stable virtual IP and DNS name. Its label selector picks the Pods. On the lesson's kind cluster the Service range is `10.96.0.0/16`.

2. What do EndpointSlices hold, and who sends each connection?

   The backend Pod IPs, each with a ready condition. kube-proxy sends each connection to one of the ready ones. Pods that are not ready get no traffic.

3. Name the five Service forms in the cheat sheet and one fact about each.

   ClusterIP is inside the cluster only. NodePort opens a port on every node, in 30000-32767. LoadBalancer asks a cloud for an address and stays pending on kind. ExternalName is a CNAME and does not proxy. A headless Service sets `clusterIP: None` so DNS returns Pod IPs.

Run this and explain

4. Expose the Deployment and run `kubectl get svc -o wide`. Which extra column does `-o wide` add?

   SELECTOR. Compare it with `kubectl get pods --show-labels` when a Service has no endpoints.

5. Run `kubectl get endpointslices -l kubernetes.io/service-name=web`. Which Pods are listed?

   The Pods matching the Service's selector, with their IPs; in the lab all three web Pods, all ready=true. A Pod that is not ready is still listed, but gets no traffic.

6. From the client Pod, fetch `http://web` and `http://web.k8s-from-zero`. When does each name work?

   `http://web` works in the same namespace. `http://web.k8s-from-zero` is the cross-namespace name. The full name adds `.svc.cluster.local`.

SCAN FOR THE LESSON

Lesson: **Kubernetes from Zero, part 8: Services**

https://aitamer.news/posts/k8s-from-zero-08-services/?utm_source=lessonkit&utm_medium=pdf&utm_campaign=k8s-08&utm_content=answer-key

NEXT IN THE SERIES Next: Lesson 9, ConfigMaps and Secrets. Kubernetes from Zero, part 9, ConfigMaps and Secrets. Series page

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Predict the outcome

7 wget says connection refused and `kubectl describe service` shows an empty Endpoints line. What did the lesson cause this with?

> A selector typo, `app.kubernetes.io/name: wbe`. Compare the SELECTOR column with the Pod labels and fix the selector.

8 Endpoints list Pod IPs, but connections are still refused. What did the lesson expose the Deployment with?

> `--target-port=9999`. The slice showed `9999`, a port nothing listens on. Use a named port (`targetPort: http`) so the Service follows the container.

9 A LoadBalancer Service stays `EXTERNAL-IP` pending. What does the lesson say to use on kind?

> NodePort or port-forward. Nothing in the cluster provisions load balancers. On a cloud cluster, check the cloud controller's events with `kubectl describe service`.

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