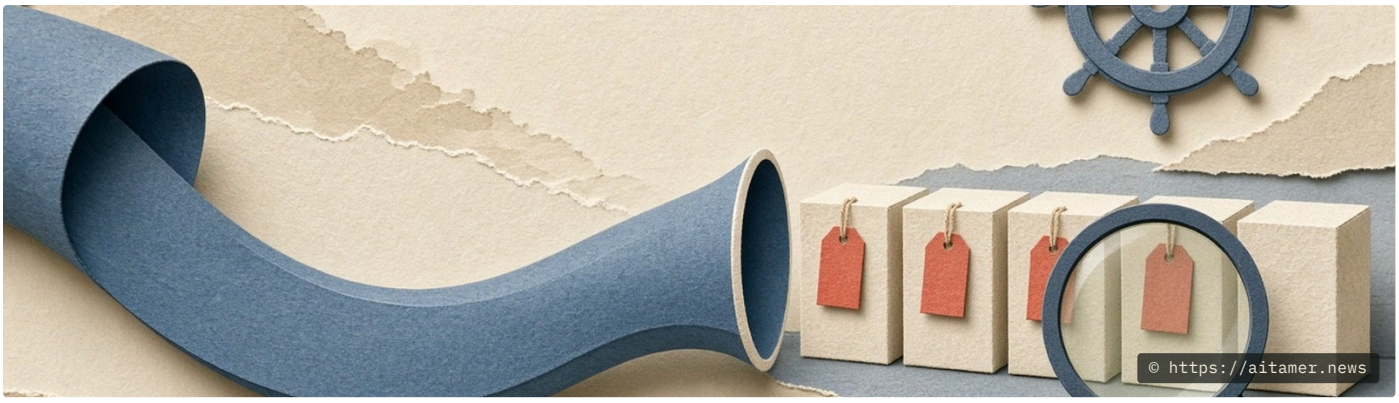


KUBERNETES FROM ZERO · FOUNDATIONS 5 OF 12 · LESSON 5 · LESSON KIT · HOMEWORK

Kubernetes from Zero, part 5: kubectl essentials

Exercises drawn only from the lesson: recall, run this and explain, predict the outcome.

Every command ran on a kind v0.33.0 cluster (node v1.37.0, kubectl v1.37.2) on 10 Nov 2026. Cluster: k8s-ep04.

Use the kind cluster and the namespace `k8s-from-zero` from part 4. The lesson's node is `k8s-ep04-control-plane`, so node names and Pod UIDs on yours will differ. Answers are in the separate answer key.

Recall

Answer from memory, then check the lesson.

1. Name the three object-management techniques, and say which one the rest of the series uses.

2. What rule does the object management page add about mixing techniques?

3. What does kubectl itself store, and what does `-v=6` add?

4. What do `--dry-run=client` and `--dry-run=server` each do?

5. What three exit codes does `kubectl diff` use?

SCAN FOR THE LESSON

Lesson: **Kubernetes from Zero, part 5: kubectl essentials**

https://aitamer.news/posts/k8s-from-zero-05-kubectl-essentials/?utm_source=lessonkit&utm_medium=pdf&utm_campaign=k8s-05&utm_content=homework

NEXT IN THE SERIES **Next: Lesson 6, namespaces, labels and annotations**. Kubernetes from Zero, part 6, namespaces, labels and annotations. Lesson page

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6 In a label selector, what does a comma mean, and which objects does `!=` match besides the ones with a different value?

Run this and explain

Run each command on your cluster, then answer.

7 Run `kubectl run quick --image=nginx:1.29-alpine -n k8s-from-zero`. What does the lesson print, and which technique is this?

8 Run the `kubectl run web ... --dry-run=client -o yaml` command from step 2. Which labels does the lesson's YAML contain, and which two fields does the lesson say you can delete?

9 Apply `web.yaml` twice. What does each run print?

10 Add `environment: dev` under `labels` and run `kubectl diff -f web.yaml`. What line does the lesson's diff add, and what is the exit code?

11 Run `kubectl explain pod.spec.containers.imagePullPolicy`. Which three values does the lesson list, and when is the default `Always`?

12 Apply `shop.yaml` and run the three equality selectors from the lesson (`tier=frontend`, `tier=frontend,environment=prod`, `tier!=frontend`). Which Pod names come back for each?

13 Run `kubectl label pod scratch -n k8s-from-zero environment=dev`, then the same command with `environment=test` and no `--overwrite`. What error does the lesson print?

Predict the outcome

Write your prediction first. Then check the answer key.

14 You run `kubectl create -f web.yaml` for a Pod named `web` that already exists. What error does the lesson quote?

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15 You `kubectl edit` Pod web so `environment` is `test`, then `kubectl apply -f web.yaml` while the file still says `dev`. What does ENVIRONMENT show afterwards, and what happens to a label `owner=me` that the file never mentions?

16 You JSON-patch Pod web so container `web` has `containerPort` 8080. What does the API do?

17 You run `kubectl get pods -n k8s-from-zero -l tier=Frontend`. What does the lesson say comes back, and why?

18 You are about to run `kubectl delete pods -n k8s-from-zero -l environment=dev`. What does the lesson tell you to run first, and which Pod did that selector delete in the lab?

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