


KUBERNETES FROM ZERO · FOUNDATIONS 9 OF 12 · LESSON 9 · LESSON KIT · ANSWER KEY

# Kubernetes from Zero, part 9: ConfigMaps and Secrets

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. Which ways of injecting a setting update a running container, and which stay fixed?

   Variables are fixed when the container starts. Volume files update after a delay (the kubelet sync period plus cache delay; about a minute in the lab). A `subPath` mount never updates in a running Pod.

2. What is a Secret on the API, and what is it not?

   It is base64-encoded. By default it is unencrypted in etcd. base64 is not encryption. Limit who can read Secrets and who can create Pods.

3. What does `immutable: true` force you to do when a value must change?

   Create a new object under a new name and point the workload at it. The symptom of editing an immutable object is `field is immutable when immutable is set`.

4. What is the size limit, and what happens if the Pod and the ConfigMap are in different namespaces?

   1 MiB per ConfigMap or Secret. Use volumes for more. A Pod can only use objects in its own namespace; one that exists only elsewhere counts as missing, so the container does not start (`CreateContainerConfigError` for an env reference, as in the lesson).

## Run this and explain

5. Create a Secret with `--from-literal` and read `.data.password` through jsonpath and `base64 -d`. What do you get back?

   The original literal. Kubernetes encoded it. The lesson's troubleshooting list says to let Kubernetes encode it, using `stringData` or `--from-literal`.

6. Change a ConfigMap that a Deployment reads as an environment variable. The app still shows the old value. What command does the lesson give?

   `kubectl rollout restart deployment/app`. New Pods read the new values. The running container already took its variables at start.

SCAN FOR THE LESSON

Lesson: **Kubernetes from Zero, part 9: ConfigMaps and Secrets**

https://aitamer.news/posts/k8s-from-zero-09-configmaps-and-secrets/?utm_source=lessonkit&utm_medium=pdf&utm_campaign=k8s-09&utm_content=answer-key

NEXT IN THE SERIES **Next: Lesson 10, probes and graceful shutdown**. Kubernetes from Zero, part 10, Probes and graceful shutdown. Lesson page

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## Predict the outcome

**7** A Pod stays in `CreateContainerConfigError` and describe ends with `configmap "app-confg" not found`. What caused it in the lesson, and what retries?

> A typo in `configMapKeyRef.name`. Fix the name, or create the object. The kubelet retries on its own. Mark a reference `optional: true` only when the app can run without it.

**8** Logins fail with a password that looks right. How did the lesson say the newline got into `data`?

> The value was encoded with `echo` instead of `echo -n`, so `data` holds `password` plus a newline. Use `stringData` or `kubectl create secret --from-literal`.

**9** A Secret value is in Git or in `last-applied-configuration`. What do you do first?

> Rotate the credential first, then clean up. Removing the file does not remove it from history.



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