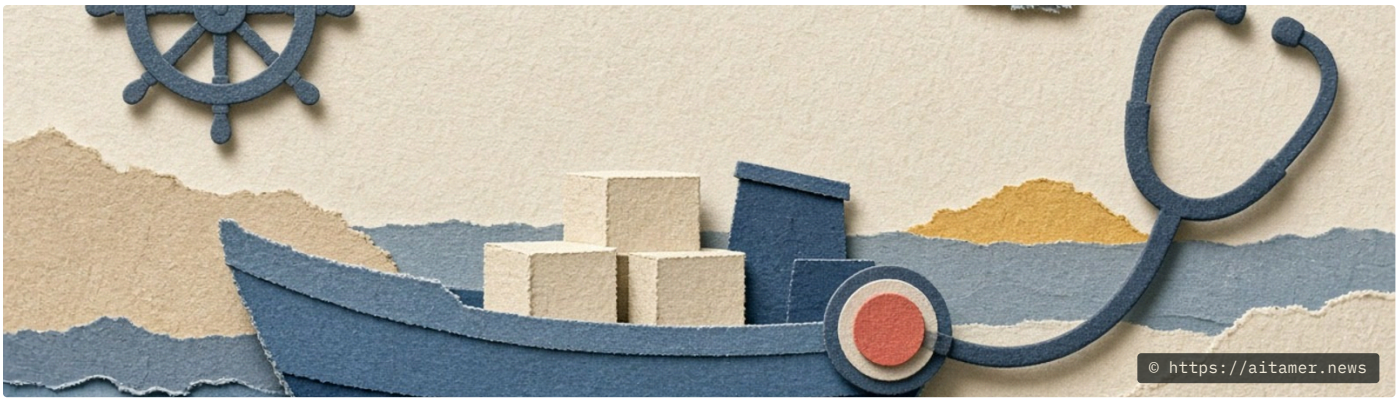


KUBERNETES FROM ZERO · FOUNDATIONS 10 OF 12 · LESSON 10 · LESSON KIT · ANSWER KEY

Kubernetes from Zero, part 10: probes and graceful shutdown

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.

Ran every probe and shutdown example on kind v0.33.0, node v1.37.0, kubectl v1.37.2, 10 Nov 2026. Cluster: k8s-ep10.

Recall

1. What does each of the three probes decide?

   Startup covers start time. Liveness restarts a stuck container. Readiness decides whether a Pod gets Service traffic.

2. Does a failing readiness probe restart the Pod?

   No. It sets the endpoint's `ready` condition to false. The Pod keeps running.

3. In what order does a delete run, and when does the clock start?

   The preStop hook, then SIGTERM, then SIGKILL when the grace period ends. The clock starts before the hook. The default grace period is 30 seconds.

4. What are the default `periodSeconds`, `timeoutSeconds` and `failureThreshold`?

   10, 1 and 3.

Predict the outcome

5. A readiness probe points at port 8080, where nginx does not listen. What does rollout status print, and which Pods keep serving?

   `error: timed out waiting for the condition`. The new Pod sits at `0/1` with `Readiness probe failed` and connection refused. The old Pods keep serving. Fix the manifest and apply it, or `kubectl rollout undo`.

6. RESTARTS climbs and events say `failed liveness probe, will be restarted`. What two causes does the lesson name, and where do dependency checks belong?

   The probe may be too strict, such as a 1-second `timeoutSeconds` on a slow endpoint, or the app may need longer to start. Use a startup probe for start time. Keep liveness about the process itself. Put dependency checks in readiness, if anywhere.

7. Every delete takes 30 seconds. What is the process doing, and what does the lesson say about wrapper scripts?

   The process ignores SIGTERM. Common causes: a shell script as process 1 without `trap`, or a shell wrapper that starts the real app as a child so the signal never reaches it. Use `exec` in wrapper scripts, or handle the signal.

SCAN FOR THE LESSON

Lesson: **Kubernetes from Zero, part 10: probes and graceful shutdown**

https://aitamer.news/posts/k8s-from-zero-10-probes-and-graceful-shutdown/?utm_source=lessonkit&utm_medium=pdf&utm_campaign=k8s-10&utm_content=answer-key

NEXT IN THE SERIES **Next: Lesson 11, requests, limits and QoS**. Requests, limits and QoS, where you give each container a CPU and memory budget and watch what happens when it goes over. Lesson page

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8 A preStop hook needs 55 seconds and the app needs 10, with a 60-second grace period. What happens?

> The hook and the shutdown share one budget. A 60-second grace period kills the app mid-shutdown. Raise `terminationGracePeriodSeconds` to cover both.

SCAN FOR THE LESSON

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