

KUBERNETES FROM ZERO · WORKLOADS & TROUBLESHOOTING 1 OF 14 · LESSON 13 · LESSON KIT · ANSWER KEY

Kubernetes from Zero, part 13: Volumes, PersistentVolumes, claims and StorageClasses

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 three-node kind v0.33.0 cluster (node v1.37.0, kubectl v1.37.2) on 10 Nov 2026. Cluster: k8s-ep13.

Recall

1. What happens to an emptyDir when the Pod is deleted?

   It disappears with the Pod. It is scratch space. The lesson says to avoid hostPath.

2. Which object does a Pod name, and which object is cluster-scoped?

   The Pod names a PersistentVolumeClaim. The PersistentVolume is cluster-scoped and binds one to one. The Pod never names the PV.

3. What do RWO, RWX and RWOP mean in the lesson, and which ones does kind's local-path driver support?

   ReadWriteOnce is one node. ReadWriteMany is many nodes. ReadWriteOncePod is one Pod, CSI only. The lab's provisioner said NodePath only supports ReadWriteOnce and ReadWriteOncePod.

4. What do the two reclaim policies do?

   Delete takes the storage with the claim. It is the default for dynamic volumes. Retain leaves a Released PV and the bytes, for someone to clean up.

Predict the outcome

5. A new claim stays Pending and no Pod uses it yet. The class uses WaitForFirstConsumer. Is that a failure?

   No. That is normal until a Pod uses it. If a Pod exists and the claim is still Pending, read the claim's events with `kubectl describe pvc`.

6. You ask kind for ReadWriteMany. What stays Pending, and where is the error?

   The claim and the Pod both stay Pending. The claim's events say NodePath only supports ReadWriteOnce and ReadWriteOncePod. The Pod's own events can be empty, so read the claim.

SCAN FOR THE LESSON

Lesson: **Kubernetes from Zero, part 13: Volumes, PersistentVolumes, claims and StorageClasses**

https://aitamer.news/posts/k8s-from-zero-13-volumes-pv-pvc-storageclass/?utm_source=lessonkit&utm_medium=pdf&utm_campaign=k8s-13&utm_content=answer-key

NEXT IN THE SERIES **Next: Lesson 14, StatefulSets**. Kubernetes from Zero, part 14, StatefulSets. Lesson page

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7 A claim with `storageClassName: fast` stays Pending. What is missing?

> No StorageClass named fast. The event says `storageclass.storage.k8s.io "fast" not found`. Check `kubectl get storageclass`.

8 You delete a claim and the data is still there. What policy did the volume have?

> Retain. The PV becomes Released and the bytes stay until someone cleans them up. Check RECLAIM POLICY before you delete a claim.

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