



# Database Best Practices

## Project Astra

Ben Cammett  
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# Database Best Practices

The following suggestions are considered "best practices" for deploying a database on Kubernetes, regardless of which database system you choose to deploy. These tips can help you plan ahead to avoid the most common causes of data loss.

## Avoid a Single Point of Failure



The Project Astra alpha release only supports a single database instance.

If there's one thing you can count on, it's unexpected failures. We recommend the following steps to help limit the scope of a failure.

- Use live replicas that automatically share changes.
- Create and implement a backup strategy.
- Put your data copies in different zones. Ideally, in different geographic zones, not just different availability zones.



Use the [Kubernetes affinity/anti-affinity feature](#) to lock your data copies to the zones you set up. This ensures your data copies stay where you want them to be.

## Check Your Persistent Volume Allocation and Size

After you provision a cluster, it's important to verify that your Persistent Volume (PV) has been correctly allocated.

In some cases, a PV can silently fail to be allocated. If this happens, everything can seem fine right up until the pod fails – at which point you lose all your data.

We also recommend you check your pods to verify that the file system mount points match the persistent volume size.



To help ensure success, use a [Kubernetes operator](#) designed for your database system. Use this operator to allocate and manage your cluster's storage.

## Set a Reclaim Policy

To protect your data against accidental deletion, set "Retain" as the [reclaim policy](#) for your PV.

"Delete" is the default reclaim policy. This means if you accidentally delete the Persistent Volume Claim (PVC), the corresponding PV is automatically deleted, along with all the data stored there.

If you set "Retain" as the reclaim policy, the PV is not deleted if the PVC is deleted. Instead, the PV is

moved to the **Released** phase, which lets you manually recover all of its data.

You may also want to add tags to your PVs. This makes the PVs easier to find and reattach if you have to recreate the cluster.

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