ONE PAGE SUMMARY

IT & Software › Kubernetes › Storage in Kubernetes

Introduction to Storage in Kubernetes

Mastering Storage Solutions in Kubernetes Made Easy!

DEFINITION

> Storage in Kubernetes refers to how data is managed and accessed by applications running in containers. It enables persistent data storage beyond the lifecycle of individual containers.

KEY CONCEPTS

Persistent Volumes (PV)

PV is a piece of storage in the cluster that has been provisioned by an administrator or dynamically provisioned using Storage Classes.

Persistent Volume Claims (PVC)

PVC is a request for storage by a user that specifies size and access modes, allowing users to claim storage resources.

Storage Classes

Storage Classes define different types of storage available in a cluster, allowing dynamic provisioning of PVs based on user needs.

Dynamic Provisioning

Dynamic provisioning automatically creates PVs when a PVC is created, simplifying storage management.

Access Modes

Access modes determine how a volume can be mounted by pods, including ReadWriteOnce, ReadOnlyMany, and ReadWriteMany.

EXAMPLES

→ Creating a PVC to request a 10Gi volume for a database.

→ Using a Storage Class to provision high-speed SSD storage for an application.

→ Mounting a PV to a pod for persistent data storage.

MEMORY TIPS

★ Remember PV as 'Persistent Volume' and PVC as 'Persistent Volume Claim' – think of claiming your volume!

★ Use 'SC' for Storage Classes to remind you of 'Storage Categories'.

★ Access modes can be remembered as 'R' for Read and 'W' for Write, with the number indicating how many can access it.

COMMON MISTAKES

✗ Confusing PV and PVC; remember PV is the actual storage, PVC is the request.

✗ Neglecting to specify access modes in PVC, leading to unexpected behavior.

✗ Assuming all storage types are the same; different applications may require different Storage Classes.

QUICK RECAP

Kubernetes storage involves managing data through Persistent Volumes and Claims, allowing applications to maintain data across container lifecycles. Understanding Storage Classes and access modes is crucial for effective storage management.