

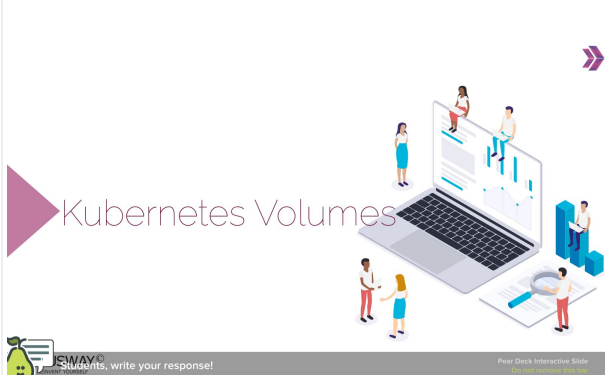
4. Kubernetes Volumes

EU-004-29Nov20-Kubernetes-volumes
Training Clarusway
Pear Deck - November 29, 2020 at 0:10PM

Part 1 - Summary

Use this space to summarize your thoughts on the lesson

Part 2 - Responses

Slide 1	Your Response
 The slide features a large laptop in the center with several stylized human figures interacting with it. One figure stands on the laptop screen, while others are positioned around it. To the left of the laptop, the text 'Kubernetes Volumes' is displayed next to a large purple arrow pointing right. In the bottom left corner, there is a small logo and the text 'Clarify your understanding, write your response!'. In the bottom right corner, it says 'Pear Deck Interactive Slide'.	

Use this space to take notes:

Slide 2

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- ▶ Volumes
- ▶ Volume Types
- ▶ PersistentVolumes
- ▶ PersistentVolumeClaims

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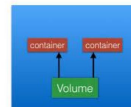


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Slide 3



Volumes



Pod

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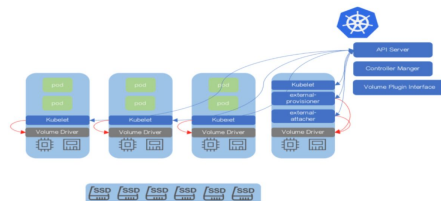
Volumes

- on-disk files in a Container are ephemeral. All data stored inside a container is deleted if the container crashes. When a Container crashes, kubelet will restart it, but the files will be lost which means that it will not have any of the old data.
- To overcome this problem, Kubernetes uses **Volumes**. A Volume is essentially a directory backed by a storage medium. The storage medium, content and access mode are determined by the Volume Type.

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Slide 5

Volumes



A **volume** can be thought of as a directory which is accessible to the containers in a pod.

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Volume Types

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Volume Types



Kubernetes supports several types of Volumes.

- **emptyDir:** An emptyDir volume is first created when a Pod is assigned to a Node and exists as long as that Pod is running on that node. As the name says, it is initially empty. When a Pod is removed from a node for any reason, the data in the emptyDir is deleted forever.
- **hostPath:** A hostPath volume mounts a file or directory from the host node's filesystem into your Pod. If the Pod is terminated, the content of the Volume is still available on the host.

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▶ Volume Types



- **awsElasticBlockStore:** An awsElasticBlockStore volume mounts an Amazon Web Services (AWS) EBS Volume into your Pod.
- **azureDisk:** An azureDisk is used to mount a Microsoft Azure Data Disk into a Pod.
- **Secret:** A secret volume is used to pass sensitive information, such as passwords, to Pods.

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▶ Volume Types



- **configMap:** The configMap resource provides a way to inject configuration data, or shell commands and arguments into a Pod.
- **persistentVolumeClaim:** A persistentVolumeClaim volume is used to mount a PersistentVolume into a Pod.

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3 PersistentVolumes

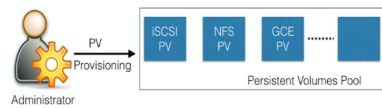
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► PersistentVolumes

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



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PersistentVolumeClaims

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PersistentVolumeClaims



A **PersistentVolumeClaim (PVC)** is a request for storage by a user. Users request for PersistentVolume resources based on type, access mode, and size. There are three access modes:

- ReadWriteOnce (read-write by a single node)
- ReadOnlyMany (read-only by many nodes)
- ReadWriteMany (read-write by many nodes).
- Once a suitable PersistentVolume is found, it is bound to a PersistentVolumeClaim.

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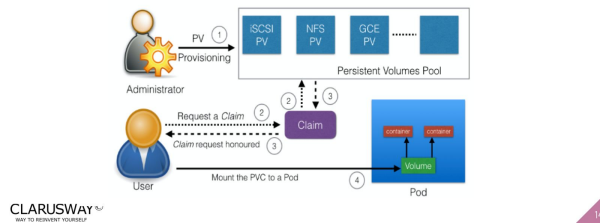


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Slide 14

► PersistentVolumeClaims

Once a suitable PersistentVolume is found, it is bound to a PersistentVolumeClaim.



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Slide 15

Your Response

THANKS!

Any questions?

You can find me at:

► james@clarusway.com



Students, write your response!

Peer Deck Interactive Slide

Link(s) on this slide:

- <mailto:john@clarusway.com>

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