



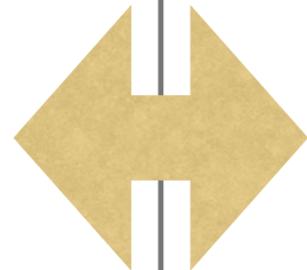
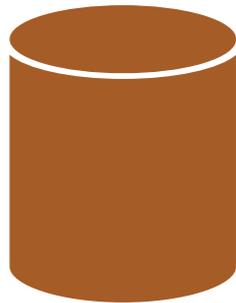
kubernetes

Kubernetes: Introduction

KUBERNETES : Get Start with Kubernetes

- Kubernetes is **Open Source** Orchestration system for Docker Containers.
- Kubernetes Implemented by **Google**.
- Kubernetes is a platform that eliminates the manual processes involved in **deploying containerised applications**.
- Kubernetes used to manage the **State of Containers**.
 - Start Containers on Specific Nodes.
 - Restart Containers when gets Killed.
 - Move containers one Node to Another.

KUBERNETES : Challenges without Orchestration



Multiple Services

Running Inside Containers

**Increase the Human
Cost of Running
Service**

**Increase the Bills
from Cloud Service
Provider**

**Increase Complexity
of Infrastructure**

**Scaling was very
Difficult**

**Setting Up Services
Manually**

**Manual Fix if any
Node is Crashed**

KUBERNETES : Features of Kubernetes

- **Automated Scheduling** : Kubernetes provides advanced scheduler to launch container on cluster nodes based on their resource requirements and other constraints.
- **Healing Capabilities**: Kubernetes allows to replaces and reschedules containers when nodes die. Kubernetes doesn't allow Containers to use, until they get ready.
- **Auto Upgrade and RollBack** : Kubernetes rolls out changes to the application or its configuration.
Monitoring Application ensure that Kubernetes doesn't kill all Instance at that time.
If something goes wrong, with Kubernetes you can rollback the change.

KUBERNETES : Features of Kubernetes

- **Horizontal Scaling** : Kubernetes can scale up and scale down the application as per the requirements with a simple command, using a UI, or automatically based on CPU usage.
- **Storage Orchestration** : With Kubernetes, you can mount the storage system of your choice. You can either opt for local storage, or choose a public cloud provider.
- **Secret & Configuration Management** : Kubernetes can help you deploy and update secrets and application configuration without rebuilding your image and without exposing secrets in your stack configuration.

KUBERNETES : Features of Kubernetes

► **You can Run Kubernetes Anywhere:**

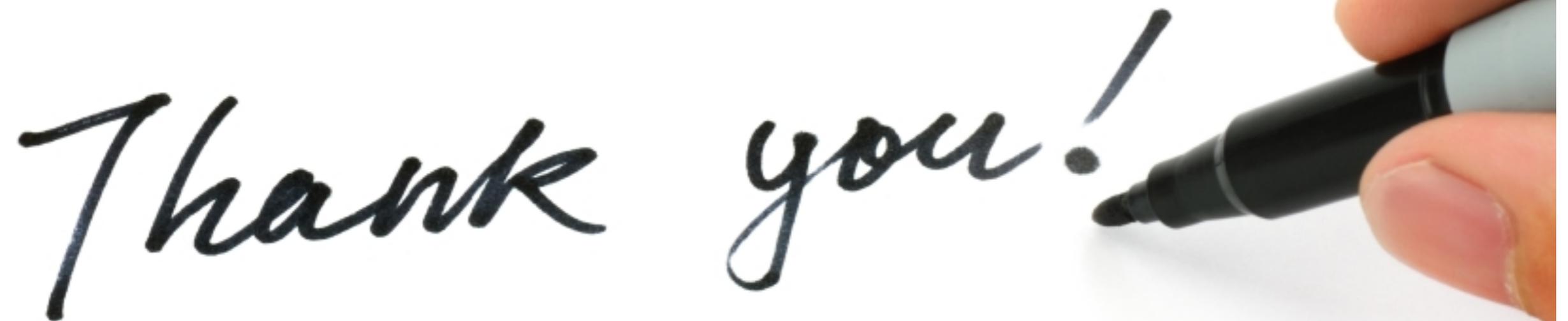
On-Premise (Own DataCenter)

Public Cloud (Google, AWS, Azure, DigitalOcean...)

Hybrid Cloud

Will see you in Next Lecture...

Thank you!

A close-up photograph of a hand holding a black marker, writing the words 'Thank you!' in a cursive script on a white surface. The hand is positioned on the right side of the frame, with the fingers gripping the marker. The text is written in a fluid, handwritten style.

See you in next lecture ...