Day 1

1. Why Docker? Why Now?

2. Setup Docker for Your OS

3. Creating and Using Containers

   3.1. Check Our Docker Install and Config

   3.2. Starting a Nginx Web Server

   3.3. What Happens When We Run a Container

   3.4. Container VS. VM: It's Just a Process

   3.5. Assignment: Manage Multiple Containers

   3.6. Getting a Shell Inside Containers

4. Container Images, Where To Find Them and How To Build Them

   4.1. What's In an Image (and What Isn't)

   4.2. The Mighty Hub: Using Docker Hub Registry Images

   4.3. Images and Their Layers: Discover the Image Cache

   4.4. Image Tagging and Pushing to Docker Hub

   4.5. Building Images: The Dockerfile Basics

   4.6. Building Images: Running Docker Builds

   4.7. Building Images: Extending Official Images

5. Container Lifetime & Persistent Data

   5.1. Persistent Data: Data Volumes

   5.2. Persistent Data: Bind Mounting

Day 2

6. Kubernetes Introduction

7. Kubernetes Architecture

8. First Contact with Kubectl

    8.1. Kubectl Describe

    8.2. Exploring Resource Types

    8.3. Kubectl Get

    8.4. Kubectl Namespace Basics

9. Your First Deployment with Kubectl

    9.1. Kubectl Logs

    9.2. Deleting Pods and Watching The Effects

10. Sample Microservice App

    10.1.   Quick Compose

    10.2.   Kubernetes Image Registries

11. Walking Through App Deployments

    11.1.   Creating

    11.2.   Exposing

    11.3.   Scaling Deployments

    11.4.   Httping Testing

    11.5.   Deploying a Distributed App

12. All About Kubernetes YAML

    12.1.   YAML Creation Basics

    12.2.   YAML From Scratch on Kubernetes

    12.3.   YAML Tips and Validation

13. What is Replica-set?

14. What is Deployment?

Day 3

15. Service in K8S

    15.1.   Nodeport

    15.2.   ClusterIP

    15.3.   LoadBalancer

    15.4.   External

16. Rolling Updates and Failure Recovery

    16.1.   Rolling Update Basics

    16.2.   Rolling Update Walkthroughs

    16.3.   Failed Update Details

    16.4.   Recovering From Failed Updates

17. Volumes

    17.1.   PV

    17.2.   PVC

    17.3.   Volume Mounting

18. Configmap and Secrets in K8S

    18.1.   What is configmap?

    18.2.   What is secret?

    18.3.   How to create secret?

    18.4.   How to connect to Azure Keyvault?

19. Deploy a sample Todo Web Application

    19.1.   Create Volume

    19.2.   Create Secret

    19.3.   Deploy MySQL Pod

    19.4.   Deploy Web App

20. Horizontal scaling of POD using Replicaset

21. Ingress

    21.1.   What is ingress?

    21.2.   Why we need it?

    21.3.   Nginx Ingress controller

    21.4.   Configure Ingress controller

Day 4

Day 5

30. Azure Databricks concepts

    30.1.   Workspace

    30.2.   Interface

    30.3.   Data management

    30.4.   Computation management

    30.5.   Authentication and authorization

31. Databricks notebooks

    31.1.   Create/update/delete the notebook

    31.2.   Export and import notebook

32. Integrate Github with Databricks

33. Spark Jobs

    34. View jobs

    35. Create a job

    36. View job details

    37. Run a job

    38. Schedule a job

    39. Run a job immediately

    40. Run a job with different parameters

    41. View job run details

42. Building ML model in Databricks

    42.1.   Data preprocessing

    42.2.   Building the ML model

43. Deploying ML model using Databricks to Azure ML

    43.1.   Register and manage the model

    43.2.   Load versions of the registered model using the API

    43.3.   Predict using the model

    43.4.   Create a new model version

44. Cost management in Data bricks while running Pipelines and ML models

    44.1.   Azure Databricks Resources and Cost Structure

    44.2.   Azure Databricks overall costs

    44.3.   Azure Databricks Granular Cost Breakdown

    44.4.   Managing costs through cluster policies

    44.5.   Datalake costs