

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
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 - 8.2. Exploring Resource Types
 - 8.3. Kubectl Get
 - 8.4. Kubectl Namespace Basics
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 - 9.1. Kubectl Logs
 - 9.2. Deleting Pods and Watching The Effects
10. Sample Microservice App
 - 10.1. Quick Compose
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11. Walking Through App Deployments
 - 11.1. Creating
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 - 12.2. YAML From Scratch on Kubernetes
 - 12.3. YAML Tips and Validation
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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

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- 22.1. What is Azure Databricks?
- 22.2. Apache Spark-based analytics platform
- 22.3. Apache Spark in Azure Databricks
- 22.4. Fully managed Apache Spark clusters in the cloud
- 22.5. Databricks Runtime

23. Quickstart: Run a Spark job on Azure Databricks using the Azure portal

- 23.1. Create an Azure Databricks workspace
- 23.2. Create a Spark cluster in Databricks
- 23.3. Run a Spark SQL job

24. Introduction to Databricks and Apache Spark

- 24.1. Introduction to databricks
- 24.2. Write your first Apache Spark Code
- 24.3. Apache Spark Architecture: How Apache Spark runs on a cluster

25. Introduction to Azure Data Lake

26. Create Azure Datalake

27. Mount Azure Datalake with Azure Databricks

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- 28.1. Create a DataFrame from a CSV file
- 28.2. Configure options to read a CSV file
- 28.3. How to select columns from a DataFrame
- 28.4. How to reference columns of a DataFrame
- 28.5. Understand the DataFrame Schema
- 28.6. Specify a DataFrame Schema using a DDL-formatted string
- 28.7. Spark Architecture: The Organization of a DataFrame

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- 29.1. Adding columns to a DataFrame

- 29.2. Renaming columns of a DataFrame
- 29.3. Filtering rows from a DataFrame
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- 29.5. Joining multiple DataFrames: Part 2
- 29.6. Aggregation: Count
- 29.7. Aggregation: Count Distinct
- 29.8. Aggregation: Get the Min value
- 29.9. Aggregation: Get the Max value
- 29.10. Aggregation: Average and Mean
- 29.11. Aggregation: Grouping data
- 29.12. Practice: Business Query
- 29.13. Apache Spark Architecture: How Apache Spark Transforms data Internally
- 29.14. User Defined Function

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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
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- 41. View job run details

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- 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