Hero Services – Data Series (VILT)

**Pre-requisite**

* **Azure Technical overview of Azure Cosmos DB** - <https://azure.microsoft.com/en-us/resources/videos/ignite-2018-technical-overview-of-azure-cosmos-db/>
* **Overview of the migration journey** - <https://azure.microsoft.com/en-us/resources/videos/overview-of-migration-and-recommended-tools-services/>
* **Azure HD Insight** - <https://docs.microsoft.com/en-us/azure/hdinsight/>
* **Azure SQL Data warehouse** - <https://docs.microsoft.com/en-us/azure/sql-data-warehouse/sql-data-warehouse-overview-what-is>
* **Azure Data Bricks -**[https://azure.microsoft.com/en-us/resources/videos/azure-databricks-overview/](https://azure.microsoft.com/en-in/resources/videos/azure-databricks-overview/)
* [Azure Data Factory new features and integration with Azure Databricks](https://channel9.msdn.com/Shows/Data-Exposed/ADFv2?term=Data%20Factory&pubDate=year&lang-en=true)
* **Event Hub -**<https://azure.microsoft.com/en-in/resources/videos/azure-event-hubs-video/>
* **Azure Stream Analytics Overview -**<https://azure.microsoft.com/en-in/resources/videos/azure-stream-analytics-overview/>
* **Introduction to Windows Azure SQL Database -**<https://azure.microsoft.com/en-in/resources/videos/introduction-to-sql-database/>

Day-wise agenda

**DAY – 1**

1. An overview of Azure capabilities
   1. SQL Database and SQL Data Warehouse
   2. Storage Accounts
   3. DMS, Stream Analytics
   4. Event Hubs
   5. Data Bricks
   6. Azure Data Factory
   7. Cosmos DB
2. SQL Database an Intelligent PAAS Service
   1. Overview of Azure SQL Database
   2. Managed Instances in Azure
   3. Deploying Managed Instance for SQL Database
   4. Implementing SQL Database on Azure VM
   5. Azure SQL Single database and SQL Elastic pools
   6. Data Replication in SQL Database
   7. Configuring SQL Data Sync
   8. Business Continuity and Disaster Recovery of SQL Database
   9. Implementing Azure AD Authentication for Database

**DAY - 2**

1. Introduction to Data Lake Gen2
2. Finding the Differences in Gen 2 and Gen 1 & Blob Storage
3. Storage Explorer
   1. Securing Storage Account
   2. Advanced Threat Protection
4. Hands on – Data Lake Analytics & USQL for File Handling
5. Hands on – Data Lake Analytics & Catalog Creation & Realtime scenarios.
6. Azure Data Factory V2 and its components.

**DAY – 3**

1. Hands on for dynamic data movement from Blob to SQL DB through Data Lake .
   1. Creating Data Lake & Data factory Authentication
   2. Handling dynamic parameters in data factory.
2. Data Bricks Introduction & HOL
3. Creating workspaces and clusters

**DAY - 4**

1. Unified approach Data Analytics
2. Hands on lab on Data Analytics
3. **Deep drive into Azure Data bricks**
4. Read & Write using Data bricks part
5. Snowflake DW & Integrating Machine Learning in Data bricks.

**DAY – 5**

1. Creating data pipelines in data bricks working with streaming data in data bricks
2. Data visualizations in Databricks
3. Databricks delta tables.

**DAY – 6**

1. Introduction to Azure Cosmos DB
2. Choose the appropriate API for Cosmos DB storage
3. Create an Azure Cosmos DB database built to scale
4. Partition Keys
5. Collection & DB
6. Insert, Query the Data in Cosmos DB
7. Running Complex operations in Cosmos DB
8. Performance tuning of Cosmos DB by using partitioning & indexing
9. Distributing your data globally by Cosmos DB

**DAY - 7**

1. End to End use case with Leveraging Machine Learning in Data bricks .
2. Leveraging ADF data movement
3. Data Lake for Data Storage
4. Complete Use case Built on Travel Ticketing Domain

**DAY -8**

1. Getting Started with Azure Data Migration
   1. Azure Data Migration Services
      1. Introduction
      2. Planning for Azure Migration,
      3. Setting up Security Standards during Migration
   2. Database Migration from On-Premises to Azure

**Demos and Hands on lab**

1. Online Database Migration
2. Offline Database Migration
3. Performing Migration Trouble-Shooting,
4. Business scenarios on Azure Data Migration.

**DAY – 9**

Getting to Know DATA Warehouse on Azure

1. Data Warehouse on Azure
2. Architectural overview of Azure SQL Data Warehouse
3. Exploring Azure SQL Datawarehouse components
4. Securing and Scaling SQL Data Warehouse
5. Connecting to SQL Data Warehouse via SSMS
6. Performing queries over SQL Data Warehouse
7. Support capabilities of SQL data Warehouse and Azure Data Factory using Polybase

**Demos and Labs**

Load data into Azure SQL Data Warehouse using Azure Data Factory -

Copy data to or from Azure SQL Data Warehouse by using Azure Data Factory

Load 1 TB into Azure SQL Data Warehouse under 15 minutes with Data Factory

**DAY – 10**

**Streaming Analytical Data in Azure**

* Overview of Azure Event Hubs
* Understanding Event Hub Features
* Availability and Consistency
* Authentication and Security in Event Hubs

**Demos and Hands on lab**

* Deploying Event Hub
* Sending and receiving events using Event Hub
* Use Kafka MirrorMaker with Event Hubs for Kafka