

VINAY TECH HOUSE

Azure BI (Azure Data Engineer)

 **Trainer:** Mr. Pavan [9+ years of IT Exp, 4+ in Azure]

 **Duration:** 45-50 hours, Daily 1 hour

 **Modes:** Normal / Fast Track / One on One

 **Fee:** (Normal track) 14,000/-



Institute Provides

- In-Depth **Theory & practical** Material
- Complete **Practical Oriented** Training
- **Mock Interviews**
- Daily **Live Class Videos** Shared
- Good Interaction with the Trainers
- **Resume Preparation** Sessions

Components / Topics

Azure Resource Group, Resources & services
 Azure Accounts
 Azure pricing and Report
 Azure Storage account
 Azure SQL
 Azure Datalake Analytics
 Azure synapse Data warehouse
 Azure Polybase
 Azure Analysis Services (SSAS) ——— MSBI
 Azure Virtual Machines ——— MSBI
 SSIS ETL(SQL Server Integration Services)
 SSIS Different Deployment Methods
 Azure data Factory
 Azure Data Bricks
 Azure Active Directory
 Azure Resource Provider
 Azure Live Streaming Analytics
 Azure Logic Apps
 Life & Shift Deployment
 Github or DevOps
 Azure Migration Assesment Tool
 Microsoft Power BI

Case Studies

Case Study 1:

Creations of Azure Resources/Services

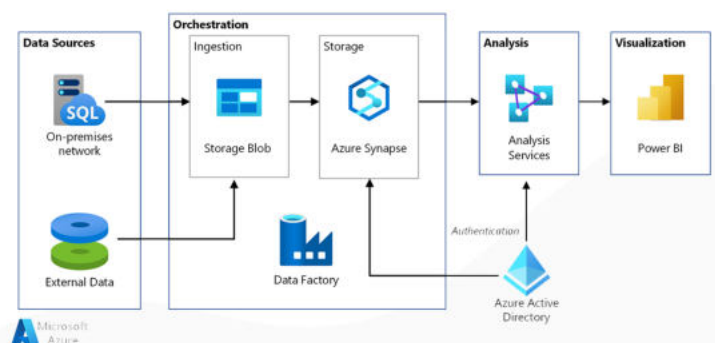
Case Study 2:

Data Movement / Loading from Various Storage System to Different Storages Accounts in Real-Time

Projects

A) Banking Project

B) TeleCommunications Project



TOPIC 1: Azure Accounts Subscription

- > Free Account
- > Student Account
- > Pay As You Go
- > Creation of Accounts

TOPIC 2: Azure Resource Group, Resources & Services

- > How to Create Resources and Resource Groups in Microsoft Azure
- > Azure Resource Manager vs. classic deployment
- > Azure to Manage or Delete Resource Group and Resource

TOPIC 3: Azure Pricing and Report

- > Azure Subscription Maintenance
- > Planning and Managing Cost
- > Azure Support Option
- > Azure Service Level Agreement
- > Azure Cost Analysis and Restriction
- > Azure Cost billing Report

TOPIC 4: Azure Storage account

- A. Blob
- B. File Shares
- C. Table
- D. Ques
- > Storage Service & Account
- > Creating a Storage Account
- > Standard & Premium Performance
- > Understanding Replication
- > Hot, Cold & Archive Access Tiers
- > Working with Containers & Blobs
- > Types of Blobs: Block Blobs, Append Blobs, Page Blobs
- > Blob Metadata
- > Soft Delete
- > Azure Storage Explorer
- > Access Blob Securely
- > Access Key
- > Account Shared Access Token
- > Service Shared Access Token
- > Shared Access Policy
- > Storage Service Encryption
- > Azure Key Vault

TOPIC 5: Azure SQL

- > Azure SQL Topics
- > Azure SQL Server
- > Azure SQL Data Base
- > Azure SQL Managed Instance
- > Azure SQL IN Virtual Machine
- > Introduction to Azure SQL Database
- > Comparing Single Database
- > Manged Instance
- > Creating and Using SQL Server
- > Azure SQL Database Tools
- > Migrating on Premise Database to SQL Azure
- > Purchasing Models
- > DTU Service Tiers
- > vCore Based Model
- > Serverless Computer Tier
- > Service Tiers
 - General Purpose / Standard
 - Business Critical / Premium
 - Hyperscale
- > Deployment of an Aure SQL Database
- > Elastic Pools
- > What is SQL Elastic Pools
 - Choosing the Correct Pool Size
- > Creating a New Pool
- > Manage Pools
- > Monitoring and Tuning Azure SQL Database
- > Configure SQL Database Auditing
- > Export and Import of Database
- > Automated backup
- > Point in Time Restore
- > Restore Deleted Databases
- > Long-Term Backup retention
- > Active Geo Replication
- > Auto Failover Group

TOPIC 6: Azure Data Lake (Hadoop System)

- > Azure Data Lake Store
 - Azure Data Lake Gen1
 - Azure Data Lake Gen2
- > Azure Data Lake Analytics
- > Introduction to Azure Data lake
- > What is Data lake
- > What is Azure Data lake

- > Data Lake Architecture?
- > Working with Azure Data lake
- > Provisioning Azure Data lake
- > Explore Data Lake Analytics
- > Explore Data Lake Store
- > Uploading Sample File
- > Using Azure Portal
- > Using Storage Explorer
- > Using Azure CLI

TOPIC 7: Azure Data Lake Analytics

- > Creation of Azure Data Lake Analytics Using Data Lake Gen1
- > U-SQL Code Job Submitting
- > Working with Sample Data and Scripts
- > Use of Analytics Units (AU's)
- > Heat Map
- > Job Graph
- > Running USQL Analytics Query from Azure Data Factory
- > Automation USQL Script using Trigger in ADF.

TOPIC 8: Azure Synapse Data warehouse

- > Creating the Synapse DWH DB
- > Dedicated SQL pools (formerly SQL DW)
- > Managing and Loading the Data in DWH Objects
- > Loading the data in DWH using ADF from different source.

TOPIC 9: Azure Polybase

- > Creating Master Key
- > Creating Scoped Credential
- > Creating External Data Source
- > Creating External File Format
- > Creating External Table

TOPIC 10: Azure Analysis Services (SSAS-MSBI)

- > Creating an Analysis Project Using Visual Studio
- > Workspace Database, Server, Direct Query, Backup to Disk
- > Installation steps, Error Mechanisms
- > Creating a Tabular model and Setting
- > Data to the Model

- > Renaming tables
- > filtering columns
- > Rename Columns
- > Monitoring relationships
- > Providing relationships
- > Create Hierarchies
- > Create Partitions
- > Create Perspectives
- > Create Roles
- > Create KPIs
- > Deployment

TOPIC 11: Azure Virtual Machines (VM's)

- > How to create Virtual Machine
- > Managing Directories
- > Accessing the RDP from On-premises
- > Direct Connecting to Remote Desktop through Public IP
- > Different Operating System Configuration.
- > Managing and Reset the VM Password.

TOPIC 12: SSIS ETL (SQL Server Integration Services) (MSBI)

- > Introduction about SSIS Tool
- > Installation Visual Studio SSDT different version for SSIS ETL
- > Creating New Project and Modifying the existing SSIS ETL Project
- > Creating different type of Packages
- > Control Flow and its different type of Tasks
- > Data Flow Task and its different type of components and Transformation
- > Different Source and Destination for data loading
- > Full Load development using SSIS Package
- > Incremental Process using Lookup Transformation, SCD and CDC components
- > Automation or scheduling the existing SSIS ETL Packages for daily load
- > SSIS Package Deployment model using Ispac file and Manifestfiles
- > Project Deployment model, Package Deployment and File System model fo SSIS ETL Packages
- > Creating Jobs to schedule the exiting SSIS ETL Packages and configurations

TOPIC 13: SSIS Different Deployment Methods

- > SSIS Package Deployment model using Ispac, File Syetem and Manifestfiles
- > Project Deployment model, Package Deployment and File System model fo SSIS ETL Packages

TOPIC 14: Azure data Factory ADF ETL**Azure Data Factory vs SSIS**

- > Linked Services
- > Data Sets
- > Pipelines
- > Parameters
- > Variables
- > Copy Data
- > Monitor Manage
- > Autor and Deploy
- > Different kinds of integration runtimes
- > How to create pipelines from template
- > How to configure different Integration Runtimes
- > Azure Integration runtime
- > Azure Self Hosted Integration Runtime
- > SSIS Integration runtime

Move & Transform

- > Copy Data
- > Data Flow

General Activities

- > Append Variable
- > Execute Pipeline
- > Execute SSIS Package
- > Get Metadata
- > Lookup
- > Stored procedure
- > Set Variable
- > Delete
- > Wait
- > Until
- > WEB
- > Precedence Constraints
- > Breakpoint
- > Data Flow

Iteration & Conditionals

- > Filter
- > For Each
- > If Condition

Integration Runtime

- > Azure Integration Services Runtime (Auto Resolved)
- > SSIS Integration Services Runtime (Lift & Shift Operation)
- > Self-Hosted Integration Runtime (Extract data from external Sources)

Data Flow Transformation

- > Append Variable
- > Source
- > Sink
- > Filter
- > Select
- > Conditional Split
- > Derived Column
- > Join
- > Lookup
- > Union
- > Aggregate
- > Exists
- > Surrogate key
- > Pivot
- > Un Pivot
- > Sort
- > Alter Row

Different Type of Loading Process in ADF

- > Incremental Load using SCD (Insert Update operation) and Lookups Transformation
- > Full Load operation for Dimension and Master data
- > Delta Load Process for Daily load with latest date data
- > Regular or Daily Load

ADF ETL Pipeline Deployments:-

- > What are ARM Templates and how to Export and Import?
- > How to Deploy Data Factory Pipelines DEV, Test, Prod environment
- > How to Create a Git Hub Account
- > How to work with Repository, Branch, Pull Request, Push Request Merge Code?
- > Code Repository in Git Hub for CICD deployments
- > Scheduling Automation ADF ETL Pipeline Using

• Triggers & Monitor: -

- > • What is Trigger and its type?
- > • Normal Schedule Trigger
- > • Event-Based Trigger
- > • Tumbling Window
- > • Logic App to Schedule Mail Alerts and ADF Pipeline
- > • Debugging and Monitoring Pipelines
- > • Error handling and Logging error records
- > • Lift and Shift SSIS packages into Azure Data Factory

Case Study | Practice on Azure ADF ETL: -

- > Moving data from Blob to Blob
- > Moving data from Blob to Azure SQL Server
- > Moving data from SQL Server to Blob
- > Moving data from ADLS to Azure SQL Server
- > Moving data from ADLS to ADLS (Gen1 & Gen2)
- > Configure different Types of Integration Runtimes
- > Azure Integration runtime
- > Azure Self Hosted Integration Runtime
- > SSIS Integration runtime for Lift & Shift operation
- > Moving Data from Blob to On Premise SQL Server
- > Moving Data from On Premise SQL Server To Azure SQL
- > Moving Data from On Premise files to Azure SQL Server
- > Moving Data from On Premise files to ADLS and to Azure SQL Server
- > Load data from Multiple tables into SQL Server using dynamic expressions & schema
- > Creation scripts
- > Load data from Multiple Files with SQL Server dynamic expressions & schema creation
- > Script
- > Implementing and auditing logs for developed package to track the detail about ADF ETL Pipelines.
- > Mail Alter configuration in ADF ETL pipeline.
- > Stored procedure inputs and outputs parameters configuration to load the data
- > Use dynamic parameters within the pipeline
- > Trigger a pipeline using another pipeline
- > Different ways to deploy Azure resources from one resource group to another resource group
- > Deploy SSIS packages to ADF and Schedule
- > Query Azure Data Lake using U-SQL activity and running the same ADF pipeline
- > Loading the data into Azure DWH Synapse from multiple sources

TOPIC 15: Azure Data Bricks

- > Configure Databricks
- > Creating the Account using Azure and Data Brick Community Edition
- > Creating and Configuring Clusters and types.
- > Create Notebooks in different platform (Python, Scala, R, Spark SQL
- > Working with Notebook & Libraries Options
- > Scheduling the Notebook.
- > Working with Data Brick File System and Notebooks
- > Data Movement\Loading Using Blob, DWH Synapse and other Storages.
- > Filler the Data and Modification
- > Assign the Cluster based on requirement to the Notebook.

TOPIC 16: Azure Active Directory

- > Role \ User Creation
- > Working with App Registration for Access Key
- > Permission

TOPIC 17: Azure Resource Provider

- > What is Azure Event Grid Event Hub
- > How to configure Event and Hub
- > Perform Realtime analytics on Event Hub Data
- > Useful of Grids in Azure Data Factory for Storage Triggers

TOPIC 18: Azure Live Streaming Analytics

- > Data Loading Process and Data Movement

TOPIC 19: Azure Logic Apps

- > Configuring and Sending Mail Alerts Using Templets
- > Scheduling the Resource or ADF using it.

TOPIC 20: GitHub or DevOps Life & Shift Deployment

- > Creating the Account
- > Managing the Master and Main Brach
- > Creation of Local Branch and code merging
- > Working with Merging and Pull Request
- > Deployment and Code Merging.

TOPIC 21: Azure Migration

- > Migration On-Premises data to Azure cloud
- > Working on BACKUP and DACPACK file to move data to Azure Storages
- > Data Migration using Azure Migration Assessment Tool

TOPIC 22: Microsoft Power BI & Power BI Service

- > What is Power BI
- > What is Power BI Service > Publish Reports into power BI cloud services
- > How to create Reports in Power BI desktop Using Azure Data sources