

## AZURE DATA ENGINEERING



### Best Training And Placement Institute



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# About Version IT

**Version IT** is not a mere software training institute, a team of IT professionals developed it as the best knowledge centre for hundreds of career-building conscious young people. Our training academy is the best training institute in Hyderabad offering various software courses with aptly placement orientation. We proudly announce that we achieved 100% placements in every batch we have taken up in the past two decades. Version IT Academy's strength is our academic excellence with which we have been placed in the top position among the software training institute in Hyderabad.



**Corporate Training**



**Class Room Training**



**Online Training**



# Why Choose Us!

## Training By Certified Instructors



### Mock Interviews



### Weekly Assignments



### Project Training



### Interview Cracking tips



### Resume Preparation

# Azure Data Engineering-Course Curriculum

## Introduction to Cloud Computing

- Understanding different CloudModels
- Advantages of Cloud Computing
- Different Cloud Services
- Different Cloud vendors in the market

## Microsoft Azure Platform

- Introduction to Azure
- Azure cloud computing features
- Azure Services for Data Engineering
- Introduction of Azure Resources/Services with examples
- Azure management portal
- Advantage of Azure Cloud Computing
- Managing Azure resources with the Azure portal
- Overview of Azure Resource Manager
- Azure management services
- What is Azure Resource Groups
- Configuration and management of Azure Resource groups for hosting Azure services

## Introduction to Azure Resource Manager & Cloud Storage Services

- Completed walkthrough of the Azure Portalwithall thefeatures
- What is Resource Groups and why do we need RG's in Azure cloud computing platform to host resources?
- Different types of Storage Accounts provisioning in Cloud computing with different storage services
- Details explanation & understanding of different Blob/container storage services
- Creating and managing the data in container storage services with Public and Private accesses as per the need of a project
- Implementation of Snapshots for Blob storage services and File share storage service
- Generating SAS for different storage services to make the storage content browseable across all the globe or Publicly

- What is Standard Storage Account and Premium Storage account and which to use accordingly as per the real time scenarios
- Detail explanation and implementation of Data Lake storage Gen2 Storage Account to store the unstructured data in cloud storage services
- All the features/properties(Overview, activity log, Tags, Access control(IAM), Storage browser...etc) of Azure Storage Accounts
- Maintenance and management of Storage keys and connection string for Azure Storage services
- Implementing different levels of access(Reader, contributor, owners...etc) to the Azure Storage accounts

## Migration of storage contents across Public & Private Clouds

- Moving the storage account with storage content across different Resource Groups based on real time scenarios
- Migrating the data from On-prem(Private cloud) to Azure Storage account (Public cloud) using Az copy(forward migration)
- Migrating the data from public cloud to Private cloud(reverse migration)
- Implementing the Az copy commands to migrate the data
- Moving the SA & its content from one Resource Group to another

## Replication of Storage Accounts Authentication & Authorization of Storage Accounts & Azure Storage Explorer

- Azure Storage explorer for creating, managing, and maintaining the Azure storage services data
- Installation of Azure Storage Explorer and what is the purpose of this tool for Azure Storage accounts(its Purpose & benefits with real time scenarios)
- Generate Shared Access Signature(SAS) in Azure Storage Explorer(ASE) for security implementation of Storage account content
- Managing of Access keys & connection strings of SA with Azure Storage Explorer
- Configuration of Authentication and Authorization for Storage Account via Azure Active Directory
- Hosting File share Storage services to On prem servers or Cloud Servers as shared drive for File share servers

## Provisioning of SQL DB's in Private & Public cloud computing

- Introduction to SQL DB's
- Creation of new SQL DB's & Sample SQL DB's both in On-prem and Cloud computing
- Planning and deploying Azure SQL Database
- Implementing and managing Azure SQL Database
- Managing Azure SQL Database security
- Planning and deployment of SQL DB's in Azure cloud computing with real time scenarios
- Different DB's Deployment options
- Databases purchasing models.(VCore & DTU's)
- Visualization of cloud DB server, Database, and validation of data from on-prem(private cloud)
- Implementation of Firewall security rules on Azure DB servers to access and connect from on-prem SSMS
- Creation of Database in on-premises and synch with azure cloud

## SQL DB Migrations

- Migrating SQL DB's from On-premises to Azure cloud computing using Microsoft Data migration assistant
- Restoring SQL DB's from On-prem to cloud computing
- Migration of Specific DB objects from on-prem to cloud based upon project requirements
- Implementation of RSV and scheduling the backups of SQL DB's and Azure Storage Account file share services on schedule, on demand based upon real time scenarios

## Introduction to SQL Server & SQL Queries from basics to Advance(till ADE Services)

- Introduction to SQL DB Queries
- SQL queries detail explanations, syntax & execution based upon real time scenarios



## What is Azure Data Factory(ADF)

- Deep understanding and implementation of concepts/Components of ADF
- Building blocks of Azure Data Factory
- Complete features and walk through of Azure Data factory studio
- Different triggers and their implementation in ADF
- What is integration run time and different types of integration run time in ADF
- When to use ADF
- Why to use ADF
- Different types of ADF pipelines
- Pipelines in ADF
- Different types of Activities in ADF
- Datasets in Azure Data factory
- Linked services in ADF

## Controls/Activities of Azure Data Factory(ADF) for copying the DATA across various sources to Azure IAAS & PAAS Services

- Copying the data from Blb Storage account to ADL's Gen2 Storage account
- Copying of zip files(.csv) from Blob SA to ADL's Gen2 SA using ADF
- Implementation and explanation of Metadata control in ADF to find the structure before copying the data
- Implementation and explanation of Validation and If Condition
- Implementation of Get Metadata control, filter control & For Each Control or activities in ADF
- Implementation & execution to copy the data from GitHub platform to Azure Storage services with variables and parameters
- Implementation of Foreach control, copy data control and Set variable to dynamically load the data from source to target using ADF
- Creating Dynamic pipelines with lookup activity to copy multiple .csv files data picking from Json format data in Azure Storage services
- Copying the files from GitHub Dynamically with the use of Dynamic parameters allocation-AUTOMATION PROCESS
- Copying the data from different files formats(.csv, .xlsx, .txt, .Parquet, .Json, .SQL...etc) using suitable ADF controls/activities
- Implementation and execution of Loading the data from Blb SA to SQL DB single table & multiple tables using copy data activity, ForEach activity

- Executing multiple pipelines in parallel with Execute pipeline activity

## **Scheduling Triggers for automation of Dataflow/Datacopy to various sources and destinations in ADF**

- Implementation of Schedule based triggers for different ADF pipelines containing different activities.
- Implementation of Event based triggers for different ADF pipelines containing different activities.
- Implementation of Thumbling window-based triggers for different ADF pipelines containing different activities.
- Implementation and execution of storage and Event based triggers.

## **What is Azure Keyvault, purpose of using Keyvault, Storing the SA keys, connection string in Azure KV with Access policies**

- Detail explanation & implementation of Azure Keyvaults
- Making the SQL DB connection string to store in Keyvault to enhance the security for SA content and SQL DB
- Generating the secrets inside the Azure keyvault and granting access by implementing the access policies for different users.

## **Integrating Azure Data Factory with GitHub Portal**

- Detail walk through of GitHub portal
- Creating an account, repo's, in GitHub portal
- Integrating Azure Data Factory with GitHub Portal as per project requirements.
- Placing, maintaining and executing the source code via GitHub portal for Azure Data Factory.
- Creating master branch, practice branches in GitHub portal to merge the newly created code via Pull Requests.
- Setting up the Repo for ADF pipelines and converting to live mode from GitHub portal covering with real time scenarios.

## **Data Flows Transformations in Azure Data Factory**



- Designing new Data flows
- Designing and implementing transformations
- Inline Datasets in data flow source control
- Designing and implementing of Data flow with Source transformations, Filter transformations & Sink transformations in ADF with inline Datasets
- Implementation of Select transformations with Data flows for various source controls
- Implementation of Dataflows using Aggregate & Sink transformation
- Implementation of Dataflow with conditional split & Sink transformation with copy data activity
- Implementation of Dataflow with Exists & Sink transformation
- Implementation of Azure Dataflows for Derived column transformation with Source & Sink transformation
- Implementation of Azure Dataflows to connect to SQL DB with Source & Sink transformation
- Union & Union flow transformation implementation with ADF Data flows
- Implementation of Azure Dataflows to connect to SQL DB with Source & Sink transformation
- Implementation of windows functions...like Rank() function, Dense\_Rank() function, Row\_Number() function...etc.

## Azure Data Bricks & Apache Spark

- What is Apache Spark, details explanation and implementation of Apache Spark
- Illustration and Elaboration of Apache Spark Architecture
- Explanation of RDD & DAG
- Understanding of different Apache Spark components
- What are worker nodes and slaves nodes in Azure Data Bricks clusters
- Implementation of Azure Databricks cluster by considering different worker nodes and slave nodes
- Different features and properties of Azure Data Bricks clusters

## Azure Data Bricks & Apache Spark clusters features

- Creating single node and multi nodes clusters
- Creation of Pyspark notebooks in Databricks cluster to fulfil different business requirements

## Azure Synapse Analytics

- What is Azure Synapse Analytics
- Implementation of Linked Services/Datasets in Synapse Analytics
- Implementation of dedicated SQL Pool inside Synapse Analytics
- Implementation of serverless SQL Pool inside Synapse Analytics
- Creation of Apache spark pool in Azure Synapse Analytics
- Writing SQL Script in Azure Synapse analytics to get the result set in tabular and chart formats
- Visualizing the data in Synapse analytics in variety of different charts (like pie charts, line charts, bar charts.... etc)
- Designing of Synapse Analytics pipelines by considering various activities as per the business requirements
- Creation of Datasets, Linked services for Synapse Analytics pipelines
- Data analysis with serverless spark pools in Azure Synapse Analytics
- What is Apache spark in azure synapse analytics
- Designing and development of Apache spark pool in Azure synapse
- Creating Spark Databases and tables to load the data from source system and analysing the data in Synapse analytics

## Azure Stream Analytics

- What is Azure Stream Analytics
- Purposes and usage of Stream Analytics in Azure cloud computing
- Benefits and advantages of stream analytics
- Architecture diagram of data flow in Azure stream analytics with other cloud services
- Understanding & usage of browser-based Raspberry Pi simulator
- Deployment of IoT Hub services as an input for Stream analytics jobs
- Implementation & execution of stream analytics jobs and designing inputs and outputs for IoT Hub and Datalake Gen2
- Writing SQL scripts to generate live streaming data and loading it in destination

## Our Alumni Work At



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## Our Other Courses

### Development Technologies

**Java Full stack** 

**Python Full stack** 

**.Net Full stack** 

**M E R N** 

**M E A N** 

**React** 

### Cloud Technologies

**aws** 

**Azure** 

**GCP** 

**Dev Ops** 

**Salesforce** 

**servicenow** 

### Triending Technologies

**Data Science** 

**Data Analytics** 

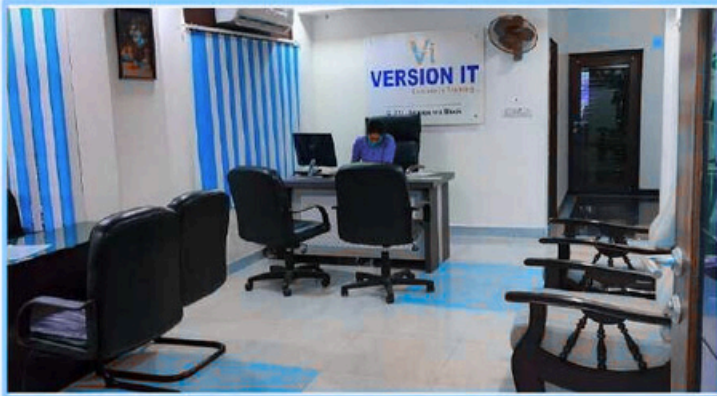
**Cyber Security** 

**Azure Data Engineer** 

**Aws Data Engineer** 

**GCP Data Engineer** 

# Our Infrastructure



## Our Branches

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