

# **DVS Snowflake Course Content**

## **Table of Contents:**

### **Snowflake - Architecture and Concepts**

- Key Concepts & Architecture
- Cloud Platforms
- Snowflake Editions
- Overview of Key Features
- Overview of the Data Lifecycle
- Continuous Data Protection

### **Connecting to Snowflake**

- Overview of the Ecosystem
- Snowflake Partner Connect
- SnowSQL (CLI Client) - Installation, Configuring and Usage
- *Lab - Snowsql Lab & Exercises*

### **Loading / Unloading Data into/from Snowflake (On-Premises to Cloud)**

- Overview of Data Loading/Unloading
- Data Loading/Unloading Considerations
- Preparing to Load/Unload Data
- Bulk Loading/Unloading from a Local File System
- Bulk Loading/Unloading from Amazon S3
- Bulk Loading /Unloading from Microsoft Azure
- Loading Using the Web Interface (Limited)
- Querying Data in Staged Files
- Querying Metadata for Staged Files
- Transforming Data During a Load
- Troubleshooting Bulk Data Loads
- *Lab - Data Loading / Unloading Lab & Exercises*

### **Loading / Unloading Data into/from Snowflake (Cloud to Cloud)**

- AWS to Snowflake Data Loading
- Snowflake to AWS data unloading

### **Loading / Unloading Data into/from Snowflake (Cloud to Cloud)**

- Loading Continuously Using Snowpipe

### **Loading / Unloading Semi Structure Data into/from Snowflake**

- Loading and Unloading Semi-Structue data from on-premises to cloud and cloud to cloud
- JSON , Parquet and XML

### **Continuous Data Loading into Snowflake - Snowpipe**

- Continuous Data Loading using Snowpipe
- Snowpipe Configuration
- Snowpipe Tuning

### **Virtual Warehouses in Snowflake**

- Virtual Warehouses
- Virtual Warehouses Design Considerations
- Resource Monitors

### **Database Objects and Storage in Snowflake**

- Databases, Tables & Views
- External Tables
- *Storage Considerations*

### **Zero Copy Cloning in Snowflake**

- Cloning
- *What can be cloned and what cannot*

### **Snowflake Time Travel and Fail Safe**

- Time Travel
- Time Travel considerations
- Fail Safe - Recovery
- *Lab - Time Travel and Fail-Safe Lab & Exercises*

### **Snowflake Continuous Data Pipelines**

- Streams, Tasks
- *Lab - Streams & Tasks Lab & Exercises*

### **Sharing Data in Snowflake**

- Introduction to Data Sharing
- Data Providers
- Data Consumers
- Working with Shares
- Using Secure Objects to Control Data Access
- Configuring a Reader Account

- Managing Reader Accounts
- *Lab - Data Sharing Exercises*

### **Managing Your Snowflake Account**

- System Usage & Billing
- Understanding Snowflake Credit and Storage Usage
- Monitoring Credit and Storage Usage
- Parameter Management

### **User Management in Snowflake**

- User Management
- *Lab - User Management Lab & Exercises*

### **Managing Security in Snowflake**

- Summary of Security Features
- Network Policies
- AWS Private Link & Snowflake
- Multi-Factor Authentication (MFA)
- Federated Authentication & SSO
- Access Control in Snowflake (DAC & RBAC)
- Data Encryption
- *Lab - Security and Encryption Exercises*

### **UDF, UDTFs and Procedures**

- User Defined Functions
- User Defined Table functions
- Procedures

### **Performance Tuning**

- Query Tuning
- Clustering
- Micro Partitions
- Materialized Views
- Performance Considerations

### **Masking Policies - Column Level and Row Level**

- Column level Masking Policies
- Row level Masking Policies

### **Masking Policies - Column Level and Row Level**

- Column level Masking Policies
- Row level Masking Policies

#### **Working With Dates and Time Stamps**

- Dates and time Stamps
- Date and Time Stamp conversions

## **Snowflake Ecosystem Topics**

- ✓ Data Migration Strategies - Challenges - Oracle , Teradata , SQL Server
- ✓ Data Lake Setup on Snowflake
- ✓ Database Nomenclature
- ✓ ETL Data Ingestion using Python - Use Cases
- ✓ High Volume - Data Unloading 100 million - Use Case Scenario
- ✓ Python Framework for Data Loading - Millions and Billions of Records
- ✓ Real World Performance Tuning, Clustering and Search Optimization Service
- ✓ Data Modeling - Designing Star Schema, Snowflake Schema , Facts and Dimension Tables, Data Vault Modeling, SCD Types
- ✓ AWS -- Exclusive intro about S3 Buckets and EC2 Nodes
- ✓ Kafka Snowflake Integration
- ✓ CI/CD Pipelines

## **By the end of this course, you will be able to:**

- ✓ Configure and manage your Snowflake account
- ✓ Connect to Snowflake using external tools
- ✓ Assign privileges to roles in the account
- ✓ Load and unload structured and semi-structured data
- ✓ Work with advanced query constructs
- ✓ Use streams to implement Change Data Capture (CDC)
- ✓ Use dynamic data masking or external tokenization to mask sensitive data
- ✓ Use cloning and sharing to enhance your development efforts
- ✓ Create and access external tables to connect to an external source of truth
- ✓ Configure virtual warehouses for maximum efficiency and monitor compute usage
- ✓ Use materialized views, clustering, and search optimization to improve query performance
- ✓ Apply effective cost-control measures on your account

## Course Agenda - Overview

- ✓ Overview
- ✓ Architecture Review
- ✓ Account Setup and Security
- ✓ Connectors
- ✓ Role-Based Access Control
- ✓ Loading Data
- ✓ Querying Data
- ✓ Streams (Change Data Capture)
- ✓ Data Security
- ✓ Agile Development
- ✓ Data Lake Support
- ✓ Unloading Data
- ✓ Resource Optimization
- ✓ Optimizing Query Performance
- ✓ Account Monitoring and Cost Control

**Duration:** 6 Weeks - Online training

### **Features:**

- ✓ Lab Exercises
- ✓ Real World Scenarios