



MULTI-DIMENSION DATA MODEL WITH SQL SERVER ANALYSIS SERVICE (SSAS)

Course ID : SQL-BI-MDM



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Duration: 3 Days

(18 Hours) 09:00 AM – 04:00 PM



Price: Call

* In-house training only

* Eligible for 200% tax deduction



Training Schedule

www.9experttraining.com

Category: Data

This course provides comprehensive training on building multi-dimensional data models using SQL Server Analysis Services (SSAS) and writing Data Mining Extensions (DMX) for forecasting. Participants will learn how to aggregate data from a dimensional model (post-ETL) and store it in a multi-dimensional cube on Microsoft SSAS. The course also demonstrates how reporting platforms—such as Microsoft SQL Server Reporting Services and Power BI Report Server—can efficiently retrieve data from SSAS cubes,

delivering significantly faster performance compared to querying directly from a data warehouse or other data sources. In addition, the course covers best practices for integrating Power BI with SSAS using Live Connection, enabling high-performance, enterprise-scale analytics.

Objectives

1. Understand how Microsoft SQL Server Business Intelligence tools operate.
2. Develop proficiency in designing and building multi-dimensional data models on SSAS.

Target Audience

1. Data Engineers seeking enterprise-grade data modeling tools.
2. Data Engineers looking to gain hands-on experience with multi-dimensional modeling on SSAS.
3. Data Analysts interested in developing data models for Power BI.
4. Business analytics professionals responsible for preparing multi-dimensional data models.
5. Chief Data Officers (CDOs), directors, managers, and individuals who are interested in multi-dimensional data modeling.

Prerequisites

1. A basic understanding of dimensional modeling (data warehouse concepts).

System Requirements

1. OS: Windows 11 or Windows 10
2. Remote Desktop Connection enabled
3. Internet access

TRAINING TOPICS



DAY 1 Morning Session

9:00 AM – 12:00 PM

1. Business Intelligence with Microsoft SQL Server

- Overview of Microsoft SQL Server Business Intelligence tools :
 - SQL Server Database Engine
 - SQL Server Integration Services
 - SQL Server Analysis Services
 - SQL Server Reporting Services / Power BI Report Server
- Data modeling concepts in Business Intelligence
- The SSAS Multi-Dimensional model development environment in Visual Studio
- An introduction to dimensional modeling (data warehouse concepts) with practical examples



DAY 1 Afternoon Session

1:00 PM – 4:00 PM

2. Components of the Multidimensional Model

- Understanding the multidimensional model
- Data sources and data source views
- Dimensions
- Measures and measure groups
- Cubes

3. Creating Data Sources and Data Source Views

- Creating and managing data sources and data source views

DAY 2 Morning Session

9:00 AM – 12:00 PM

4. Creating and Managing Dimensions

- Configuring dimensions and their properties
- Understanding dimension storage options
- Defining hierarchies (parent-child, ragged)
- Sorting and grouping dimension attributes
- Managing slowly changing dimensions

DAY 2 Afternoon Session

1:00 PM – 4:00 PM

5. Creating and Managing Measures and Measure Groups

- Configuring measures and their properties
- Managing display settings and aggregate functions
- Setting up measure groups and configuring storage options
- Defining relationships between measure groups and dimensions
- Managing aggregation and partitioning settings.

6. Advanced Cube Customization

- Implementing KPIs
- Understanding actions, perspectives, and translations

DAY 3 Morning Session

9:00 AM – 12:00 PM

7. Querying Data from Cubes

- An introduction to Multidimensional Expressions (MDX) for querying multi-dimensional data.
- MDX syntax and commonly used functions.
- Querying cubes and creating calculated members using MDX

DAY 3 Afternoon Session

1:00 PM – 4:00 PM

8. Data Mining and Forecasting

- Data mining concepts and algorithms
- Data mining tools and their applications
- Using MDX functions to support data mining tasks
- Querying data mining models using Data Mining Extensions (DMX)
- Validating the accuracy of data mining models
- Applying data mining models for analytical and forecasting purposes

9. SSAS Configuration and Management

- Managing security in SSAS
- Configuring resource allocation for SSAS
- Monitoring and maintaining SSAS operations



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