



- COURSE CODE:** SQSSAS
- COURSE TITLE:** SQL Server 2005/2008 Analysis Services (SSAS)
- AUDIENCE:** Data architects, business intelligence/data warehouse specialists, DBAs and SQL Server administrators.
- PREREQUISITES:** Completion of our course 'Data Warehousing Fundamentals' (DWHFUN-G) and a working knowledge of SQL Server or equivalent knowledge.
- DURATION:** 3 days
- LEVEL:** Beginner-to-intermediate
- SUMMARY:** This scenario-based presentation details how to use the Business Intelligence Development Studio (BIDS) to develop and deploy Analysis Services projects and to use the SQL Server Management Studio to manage the objects derived from these projects.
- OBJECTIVES:** Upon completion of this presentation, the delegate should be competent to:
- Build and deploy Analysis Services projects
 - Use Data Sources/Data Source Views
 - Design dimensions and measure groups for building, modifying and browsing OLAP cubes
 - Enhance query performance via aggregations and user hierarchies
 - Create Key Performance Indicators (KPIs)
 - Tailor cubes using multi-dimensional expressions (MDX) and other design techniques
 - Summarise SSAS good practices and performance techniques
 - Etc.
- FORMAT:** Hands-on (about 70%).

1. REVIEW OF BI TERMS & CONCEPTS

- The DW Environment
- The DW Computing Context
- What is a Data Warehouse?
- What is a Data Mart?
- What is Business Intelligence
- How do OLTP & OLAP Differ?
- What is Data Mining?
- Operational vs. Historical Data
- Dimensional Modelling
- Some Dimensional Modelling Characteristics
- What is a Star Schema?
- What is a Snowflake Schema?
- What is Metadata?

2. SSAS ARCHITECTURE TERMS & CONCEPTS

- SSAS & Microsoft BI Platform
- Unified Dimensional Model (UDM)
- Data Sources
- Data Source Views
- Cubes
- Other UDM Objects
- An SSAS Cube Instance (e.g., Imports)
- SSAS Dimension Concepts
- SSAS Dimension Relationships
- Natural Hierarchies vs. User-defined Hierarchies
- Measures vs. Measure Groups
- SSAS Measures vs. Measure Groups
- SSAS Calculations
- Key Performance Indicators
- SSAS Actions
- SSAS Partitions
- Perspectives
- Analysis Management Objects (AMO) warnings

3. CUBE DEVELOPMENT

- Prepare to develop a cube
- Cube creation
- Generate a schema
- Process and browse a cube

4. DIMENSION DESIGN

- Create a standard dimension
- Data Source/Data Source Views (DSVs)
- Dimension Wizard
- Time dimension
- Parent-child dimension
- Attribute relationships
- Attribute Relationship Designer

5. MEASURES AND MEASURE GROUPS

- Add measure groups to a cube
- Build a cube
- Semi-additive measure aggregation
- Derive distinct counts
- Simple calculations

6. AGGREGATIONS & HIERARCHIES

- Aggregation design
- User hierarchies
- Aggregation optimisation

7. INTRODUCTION TO MDX

- What is MDX?
- Tuple-based calculated members
- MDX queries
- Custom members
- MDX scripts
- Key Performance Indicators (KPIs)

8. SSAS BEST PRACTICES & PERFORMANCE

- Proactive caching
- Cube partitions
- Attribute and user hierarchy optimisation
- Cell writeback
- And more