



## SQL 2005 Analysis Services

3 Days

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## OBJECTIVES

In this course, you will learn how to use Microsoft SQL Server 2005 Analysis Services (SSAS) to design and implement OnLine Analytical Processing (OLAP) cubes and data mining models to support Business Intelligence (BI) solutions. This course includes concepts, procedures and practices based on real-world experience giving both the novice and experienced SQL Server 2005 developer the tools to build data warehousing and decision support system solutions. This course also provides information on end-user tools including Microsoft Excel 2003/2007 and Microsoft SQL Server 2005 Reporting Services.

## EXPERIENCE

This course does not require any prior experience with Analysis Server 2005. It is assumed that students have working experience with SQL Server 2000 or 2005; basic relational database concepts (e.g., tables, queries, and indexing); data transformation services; Excel 2003; and SharePoint Server 2003.

## CLASS OUTLINE

- What Is Microsoft BI?
  - Core concept – BI is the cube or UDM
  - Example cube as seen using Excel pivot table
  - MS BI is comprehensive – more than Analysis Services on SQL Server
  - Demonstration of SQL Reporting Services with cube as data source
  
- OLAP Modeling

- Modeling source schemas—stars and snowflakes
  - Understanding dimensional modeling— Dimensions (Type 1, 2, or 3) or rapidly changing
  - Understanding fact (measures) and cube modeling
  - Other types of modeling—data mining etc...
- Using SSAS in BIDS
  - Understanding the development environment
  - Creating Data Sources and Data Source Views
  - Creating cubes – using the UDM and the Cube Build Wizard
  - Refining Dimensions and Measures in BIDS
- Intermediate SSAS
  - KPIs
  - Perspectives
  - Translations – cube metadata and currency localization
  - Actions – regular, drill-through and reporting
- Advanced SSAS
  - Using multiple fact tables
  - Modeling intermediate fact tables
  - Modeling M:M dimensions, Fact (degenerate) dimensions, Role-playing dimensions, writeback dimensions
  - Modeling changing dimensions – Dimension Intelligence w/ Wizard
  - Using the Add Business Intelligence Wizards – write-back, semi-additive measures, time intelligence, account intelligence
- Cube Storage and Aggregation
  - Storage topics – basic aggregations, MOLAP
  - Advanced Storage Design – MOLAP, ROLAP, HOLAP

- Partitions – relational and Analysis Services partitions
- Customizing Aggregation Design - Processing Design
- Rapidly changing dimensions / ROLAP dimensions
- Welcome to the Real Time – Proactive Caching
- Cube processing options
- Beginning MDX
  - Basic syntax
  - Using the MDX query editor in SQL Server Management Studio
  - Most-used Functions & Common tasks
  - New MDX functions
- Intermediate MDX
  - Adding calculated members
  - Adding scripts
  - Adding named sets
  - .NET Assemblies
- SSAS Administration
  - Best practices – health monitoring
  - XMLA scripting (SQL Mgmt Studio)
  - Other Documentation methods
  - Security – roles and permissions
  - Disaster Recovery – backup / restore
  - Clustering – high availability
- Introduction to Data Mining
  - What and why
  - Examples of using each of the 9 algorithms (MS Clustering, MS Decision Trees, Naïve Bayes, MS Sequence Clustering, MS Time

Series, MS Association Rules, MS Neural Network)

- Data Mining dimensions
- Data Mining clients
- Processing mining models
- Introduction to Reporting Clients
  - Excel 2003 Pivot Tables
  - SQL RS & Report Builder
  - SPS RS web parts & .NET 2.0 report viewer controls
  - Business Scorecards 2005 & ProClarity
- Future Directions – Integration with Office 12
  - SharePoint 12 and AS
  - Report Center (type of dashboard) uses KPIs, Reports, Excel Web, Filter
  - Excel Services 12 and AS (Web Services)