

Course Outline

2796- Designing an analysis solution architecture using Microsoft SQL Server 2005 analysis services



Duration: 3 days (18 hours)

Learning Objectives:

- Capture the business and technical requirements for a BI solution
- Design and implement a logical Online Analytical Processing (OLAP) solution architecture
- Design physical storage for a multidimensional solution
- Create calculated members and named sets
- Implement Key Performance Indicators (KPIs), actions, and stored procedures
- Design the infrastructure for an OLAP solution
- Deploy and secure an Analysis Services solution in a production environment
- Monitor and optimize an Analysis Services solution
- Implement a Data Mining Solution

Target Audience:

This course is intended for experienced BI professionals. The target students for this course already have an understanding of how to use the SQL Server 2005 tools to implement BI functionality, but need to develop their understanding of design principles and best practices when planning, implementing, and deploying an Analysis Services solution.

Prerequisites:

- Have hands-on experience with database development tasks. For example:
 - Creating Transact-SQL queries
 - Writing and optimizing advanced queries (for example, queries that contain complex joins or subqueries)
 - Creating database objects such as tables, views, and indexes
- Have foundational conceptual understanding of data warehousing, data marts, and Business Intelligence. Students must be well versed on the subjects of data warehousing, data marts, and BI, and preferably have read at least one book by Ralph Kimball or Bill Inmon
- Conceptual understanding of OLAP technologies, multi-dimensional data, MDX, and relational database modeling. For example, know what facts, dimensions, measures, calculated measures, and foreign keys are
- Be familiar with SQL Server 2005 features, tools, and technologies. In particular, they must have built and queried a cube
- Have foundational understanding of Microsoft Windows security. For example, how groups, delegation of credentials, and impersonation function in a security context
- Have foundational understanding of Web-based architecture. For example, SSL, SOAP, and IIS—what they are and what their role is
- Must understand the difference between replication and ETL
- Already know how to use

- Microsoft Office Visio
- Microsoft SQL Server Business Intelligence Development Studio
- Microsoft SQL Server Management Studio
- Performance Monitor
- Microsoft SQL Server Profiler

Topics Covered:

- Capturing Business and technical requirements
 - Planning a Multidimensional Solution
 - Identifying Requirements and Constraints
 - Reviewing Solution Requirements
 - Identifying Further Information Requirements
- Designing and implementing a Logical OLAP solution architecture
 - Planning a Unified Dimensional Model
 - Designing and Implementing Fact and Dimension Tables
 - Designing and Implementing Cubes
 - Designing and implementing a UDM
 - Designing and Implementing a Relational Database Schema
 - Designing and Implementing a Cube
 - Designing and Implementing Perspectives
- Designing Physical storage for a Multidimensional solution
 - Designing Physical Storage
 - Partitioning Relational Data
 - Partitioning Multidimensional Data
 - Designing and Implementing a Storage Solution
 - Designing and Implementing Relational Partitioning
 - Designing and Implementing Multidimensional Partitioning
 - Testing the Solution
- Creating Calculations
 - Implementing Calculated Members
 - Implementing Named Sets
 - Implementing Scoped MDX Scripts
 - Implementing Calculations
 - Creating Calculated Members
 - Creating Named Sets
 - Creating a Scoped MDX Script
- Extending Cube functionality
 - Key Performance Indicators
 - Actions
 - Stored Procedures
 - Implementing Creating KPIs
 - Creating Actions
 - Creating Stored Procedures
- Designing an analysis services infrastructure
 - Considerations for Analysis Services Resource Requirements

- Considerations for Analysis Services Scalability
- Considerations for Analysis Services Availability
- Designing and implementing analysis services infrastructure
- Deploying a Multidimensional solution into production
 - Deploying an Analysis Services Database
 - Managing Analysis Services Security
 - Deploying analysis services into production
 - Enabling User Access
- Optimizing an OLAP Solution
 - Monitoring Analysis Services
 - Optimizing Performance
 - Optimizing analysis services
 - Monitoring analysis services
 - Optimizing the relational database
 - Optimizing Queries
- Implementing Data Mining
 - Introduction to Data Mining
 - Implementing a Data Mining Solution
 - Using Data Mining in a BI Solution
 - Creating a Data Mining Structure
 - Validating a Data Mining Structure