

## MS 2796A - Designing an Analysis Solution Architecture Using Microsoft SQL Server 2005 Analysis Services

**Description:** The purpose of this 3-day course is to teach Business Intelligence (BI) professionals working in enterprise environments to design a multidimensional solution architecture that supports their BI solution. Students will go through the entire process—from capturing business and technical requirements to deploying a multidimensional solution to production. Students will also be taught to develop custom functionality and optimize a multidimensional solution.

**Days:** 3

**Prerequisites:** Before attending this workshop, students must:

- 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

**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.

### **Module 1: Capturing Business and Technical Requirements**

In this module, students will first learn about key design principles that they should consider when you define the scope of a BI project. They will then learn how to identify the business and technical requirements to ensure that their solution meets the needs of its users.

#### **Lessons**

- Planning a Multidimensional Solution
- Identifying Requirements and Constraints

#### **Lab 1: Capturing Business and Technical Requirements**

### **Module 2: Designing and Implementing a Logical OLAP Solution Architecture**

This module describes considerations and guidelines for designing an OLAP solution, including a relational data warehouse and an Analysis Services cube.

#### **Lessons**

- Planning a Unified Dimensional Model
- Designing and Implementing Fact and Dimension Tables
- Designing and Implementing Cubes

#### **Lab 2: Designing and Implementing a UDM**

### **Module 3: Designing Physical Storage for a Multidimensional Solution**

In this module, students will learn how to design an effective physical storage solution for a multidimensional application.

#### **Lessons**

- Designing Physical Storage

- Partitioning Relational Data
- Partitioning Multidimensional Data

### **Lab 3: Designing and Implementing Physical Storage**

#### **Module 4: Creating Calculations**

In this module, students will learn how to create Multidimensional Expression (MDX) calculations. The module describes how to create calculated members, named sets, and scoped assignments.

##### **Lessons**

- Implementing Calculated Members
- Implementing Named Sets
- Implementing Scoped MDX Scripts

### **Lab 4: Implementing Calculations**

#### **Module 5: Extending Cube Functionality**

In this module, students will learn about the benefits of KPIs, actions, and stored procedures. They will also learn how to implement KPIs, actions, and stored procedures in an Analysis Services cube.

##### **Lessons**

- Key Performance Indicators
- Actions
- Stored Procedures

### **Lab 5: Implementing Advanced Functionality**

#### **Module 6: Designing an Analysis Services Infrastructure**

In this module, students will learn how to design an appropriate infrastructure for an OLAP application.

##### **Lessons**

- Considerations for Analysis Services Resource Requirements
- Considerations for Analysis Services Scalability
- Considerations for Analysis Services Availability

### **Lab 6: Designing and Implementing Analysis Services Infrastructure**

#### **Module 7: Deploying a Multidimensional Solution into Production**

In this module, students will learn about and compare the different deployment methods available in SQL Server 2005 Analysis Services. They will also learn about how security in Analysis Services functions and how to protect their company's critical business information.

## **Lessons**

- Deploying an Analysis Services Database
- Managing Analysis Services Security

### **Lab 7: Deploying Analysis Services into Production**

## **Module 8: Optimizing an OLAP Solution**

In this module, students will learn how to monitor Analysis Services and how to optimize performance of their Analysis Services solutions.

## **Lessons**

- Monitoring Analysis Services
- Optimizing Performance

### **Lab 8: Optimizing Analysis Services**

## **Module 9: Implementing Data Mining**

In this module, students will learn what a data mining solution is and how to design and implement data mining functionality with SQL Server Analysis Services.

## **Lessons**

- Introduction to Data Mining
- Implementing a Data Mining Solution
- Using Data Mining in a BI Solution

### **Lab 5: Implementing Data Mining**

## **Upcoming Classes**

Jun 12, 2012 - Jun 14, 2012

Jul 23, 2012 - Jul 25, 2012

Aug 15, 2012 - Aug 17, 2012

Sep 11, 2012 - Sep 13, 2012

Oct 17, 2012 - Oct 19, 2012

Nov 13, 2012 - Nov 15, 2012

Dec 11, 2012 - Dec 13, 2012