SQL Server 2008: Analysis Services

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Course description: In this course, you will learn how to use Microsoft SQL Server 2008 Analysis Services (SSAS) to design and implement OnLine Analytical Processing (OLAP) cubes, cube storage and aggregation designs 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 2008 developer the tools to build data cubes based upon measures and dimensions.

Course outline:

What is MS BI
- Introduction
- What is MS BI
- Defining Microsoft BI
- Why Use OLAP
- Understanding the UDM
- Understanding the Cube
- Dimensions and Measures
- OLAP Schemas
- Sample Databases
- Deploying/Viewing Cube
- Deploy a Cube with BIDS
- Demo: SSMS
- Demo: BIDS in VS
- Demo:SSMS Object Explorer
- Summary

SSAS Client Overview
- Introduction
- Viewing a Cube in Excel
- Cubes in Reporting Services
- Demo: Excel in RS
- Demo: RS in SQL 08
- Summary

OLAP Modeling
- Introduction
- Before Creating a Cube
- Selecting a Modeling Tool
- Understanding OLAP Modeling
- Required Components
- Star Schema Models
- Dimensional Modeling
- Demo: Visio Modeling
- Understanding Cube Modeling
- Dimension Types
- Modeling Fact Tables
- Additional Modeling Decisions
- Demo: Visio Model Cube
- Summary

Modeling in BIDS
- Introduction
- Understanding BIDS Interface
- Modeling with BIDS
- Demo: Modeling in BIDS
- Demo: Cube
- Demo: Create a new Database
- Preparing Data
- Summary

Using BIDS
- Introduction
- Understanding BIDS
- Offline vs. Online Mode
- Demo: BIDS
- Creating DataSources
- Creating DataSource Views
- Demo: DataSource
- Demo: DataSource View Designer
- Summary

Creating a Cube
- Introduction
- Creating a Cube
- Refine the Cube
- Refining Dimensions
- Refining Measures
- Define Dimension Usage
- Demo:Cube Designer
- Demo:Dimension Designer
- Demo:Dimension Wizard
- Demo:Dim - Measure Groups
- Demo:Deploy Cube
- Summary

Enhancing a Cube
- Introduction
- Attribute Relationships
- Demo: Relationships
- Creating KPIs
- Defining a KPI
- Customizing KPI Samples
- Demo: KPIs in a Cube
- Demo: Growth KPI
- Creating Perspectives
- Demo: Perspectives
- Summary

Translating An Action
- Introduction
- Creating Translations
- Demo: Translations
- Localizing Measure Values
- Currency Localization
- Config Currency Localization
- Demo: Currency Conversions
- Actions
- Demo: Actions
- Demo: Action Creation
- Summary

Advanced SSAS
- Introduction
- Multiple Fact Tables
- Cube Multiple Fact Tables
- Modeling Separate Cubes
- Linked Objects
- Dimension Usage Config
- Demo: Linked Objects
- Advanced Dimension Types
- Snowflake Dimensions
- Degenerate Dimensions
- Parent Child Dimensions
- Many to Many Dimensions
- Role Playing Dimensions
- Writeback Dimensions
- Demo: Dimension Types
- Changing Dimensions
- Summary

BI Wizard- Advanced Program
- Introduction
- Using the BI Wizard
- Wizard Dimension Options
- Demo: BI Wizard
- BI Wizard Cube Options
- Demo: Cube Options
- Demo: Browse Cube
- Summary

Advanced Properties
- Introduction
- Advanced Properties
- Cube Dimension Properties
- Dimension Properties
- Demo:Cube/Dim Properties
- Hierarchy Properties
- Attribute Properties
- Demo: Hierarchy/Attributes

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- Cube Properties
- Measure Group Properties
- Demo: Cube/Measure
- Summary

Storage And Aggregations
- Introduction
- Basic Storage- SSAS Databases
- SSAS Data and Metadata
- About XMLA
- Demo: XMLA
- Three Storage Modes
- MOLAP
- ROLAP
- HOLAP
- Overview of Aggregations
- Defining Aggregations
- Viewing Aggregation Designs
- Demo: Aggregation Designs
- Summary

Advanced Aggregations
- Introduction
- Customizing Aggregations
- Usage-Based Optimization
- Demo: Usage-Based Wizard
- Using SQL Profiler
- Demo: SQL Profiler
- Summary

Advanced Storage
- Introduction
- Advanced Storage
- Storage Mode Settings
- ROLAP Dimensions
- Demo: Storage Modes
- Implementing Proactive Caching
- Defining Proactive Caching
- Notification Settings Caching
- Partitions/Advanced Storage
- Partition Locations
- Using Partitions-Where?
- Demo: Partitions in a Cube
- General Processing Options
- Measure Groups+Partitions
- Dimension Processing Options
- Data Mining Processing Options
- Processing Settings
- Demo: Processing in BIDs
- Summary

MDX Overview
- Introduction
- Understanding MDX
- Using MDX in BIDS
- MDX Queries
- MDX Expressions
- MDX Structure Names
- Demo: MDX Structure
- MDX Syntax Rules
- Writing MDX Query
- Demo: Writing MDX Queries
- Summary

MDX Queries
- Introduction
- Members, Tuples, and Sets
- Demo: Tuples and Sets
- Familial Relationships
- Navigational Functions
- Demo: Navigtional Functions
- Summary

MDX Functions
- Introduction
- MDX Functions & Keywords
- Demo: MDX Functions
- Functions & Keywords (cont)
- Demo: Functions (cont)
- More Functions
- Functions added to SSAS 05
- Demo: More Functions
- Summary

Calculated Members
- Introduction
- Using MDX Expressions in BIDS
- Demo: MDX in BIDS
- Working with Calculations
- The Calculations Subtab
- Demo: Calculations Subtab
- Examine Calculated Members
- Why Use Calculated Members
- Defining Calculated Members
- Demo: Calculated Members
- Summary

Script Commands & .NET
- Introduction
- About MDX Scripts
- Add MDX Commands
- Demo: Script Commands
- Demo: Break Points
- Understand Named Sets
- Creating Named Sets
- Demo: Named Sets
- About .NET Assemblies
- Add .NET Assemblies
- Why Assemblies?
- Demo: Register a .DLL
- Summary

Data Mining Overview
- Introduction
- What is Data Mining
- Data Mining Terminology
- Demo: Mining Model
- Business Questions
- Algorithm Classifications
- Implementing Data Mining
- Summary

Implementing Data Mining
- Introduction
- Mining Algorithms
- Demo:Mining Models
- DM Algorithms 1
- DM Algorithms 2
- DM Algorithms 3
- DM Algorithms 4
- Summary

Creating Mining Structures
- Introduction
- Creating Mining Structures
- Demo: Data Mining Wizard
- Content Types
- Data Types
- Data Types (cont)
- Finishing the Wizard
- Demo: Wizard from Cube
- Summary

Data Mining Designer
- Introduction
- Mining Structure Subtab
- Mining Models Subtab
- Demo:Structure+Models Subtabs
- Mining Model Viewers
- Demo: Model Viewers
- Summary

Validating Mining Models
- Introduction
- Mining Accuracy Charts
- Demo: Accuracy Charts
- Cross Validation
- Demo: Cross Validation
- Mining Prediction Viewers
- Working with the DMX
- Demo: Query in BIDS
- Demo: Query in SSMS
- Mining Structure Processing
- Summary

Securing SSAS
- Introduction
- Implementing Security
- Configuring SSAS Admin
- Reducing the Attack Surface
- Data Connection Methods
- Demo: Configure Security
- Implement Database Roles
- Securing Dimensions
- Security Considerations
- Demo: Roles + Permissions
- Summary

Scripting SSAS
- Introduction
- Implement XMLA Scripts
- Demo: XMLA Script Templates
- XMLA Schema Rowsets
- OLE DB Schema Rowsets
- OLE DB OLAP Rowsets
- Data Mining Schema Rowsets
- Demo: Data Mining Rowsets
- Demo: Schema Rowsets
- Summary

Managing SSAS
- Introduction
- Deploy and Synchronizing
- Deploying Using BIDS
- Deployment Wizard
- Database Synchronization
- Demo:Database Deployment
- Understand Backup/Restore
- What to Backup
- SSAS Database Backups
- Demo: Backup and Restore
- Demo: Backup to a Job
- Summary

SSIS with SSAS
- Introduction
- Using SSIS with SSAS
- SSIS to Process Partitions
- SSAS Processing Task
- Other SSIS AS Tasks
- Demo: SSIS tasks in AS
- Summary

Availability and Scalability
- Introduction
- Availability and Scalability
- Understanding Clustering
- Scale-up Solutions
- Scale-Out with Read-only
- Additional Scale-out Options
- Adjust Instance Properties
- Adjust Reporting Settings
- Demo: Scalability Properties
- Summary

Optimizing Performance
- Introduction
- Optimization Overview
- Design Efficiently
- Retrieve Data Efficiently
- Aggregate Appropriately
- Optimize Attributes
- Monitor Intelligently
- Demo: Perfmon and Profiler

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• Query Efficiently
• Summary

Excel 2007
• Introduction
• Excel 2007
• Managing Connections in Excel
• Excel PivotTable Reports
• Demo: Excel Connections
• Demo: Excel PivotTable
• Excel PivotChart Reports
• Demo: PivotCharts
• OLAP Tools
• Demo: OLAP Tools
• Summary

Data Mining Add Ins
• Introduction
• Excel as a Data Mining Client
• Data Mining Add-ins Interface
• Demo: DataMining Ribbon
• Data Preparation
• Demo: Data Preparation
• Data Modeling
• Accuracy and Validation
• Demo: Data Modeling
• Demo: Accuracy and Validation
• Model Usage
• Management, Connections
• Demo:Management
• Data Mining Template Visio
• Demo: Data Mining Template
• Summary

SSRS with SSAS
• Introduction
• About SSRS
• Demo: SSRS
• SSRS-Designing Reports
• SSRS and SSAS
• Demo: SSRS with SSAS
• Summary

SharePoint Integration
• Introduction
• About MOSS
• MOSS Sturucture & Terms
• MOSS-Excel Services
• Demo: SharePoint Report
• MOSS Report Center
• Demo: MOSS - KPIs
• Summary