Microsoft SQL Server 2008 Business Intelligence (SSAS)

Key Data

Course Name	Developing, Implementing & Administering Business Intelligence solutions with SQL Server 2008 Analysis Services – Deep Dive with Hands-On
Also covers	Advance Data warehousing concepts & techniques, Integration with Excel 2007, MDX
Highlight	Creating Digital Dashboards in Excel 2007
Course Code	Pi0621
Course duration	4 days (36 hrs) – 9 hours per day.
Certification	After attending this course, participants can pursue SQL Server 2008 BI certifications
Course dates	See below
Course Description	This course provides participants with deep technical & practical understanding of SQL Server Analysis Services, Advance Data warehousing techniques & deep integration with Excel 2007. The workshop is equipped with complete hands-on. Remember, this is a deep dive with in-depth sessions.
Trainer	Amit Bansal (http://www.peoplewareindia.com/aboutAmit.htm) www.amitbansal.net

Overview

With this course, participants will get deep technical & practical understanding of SQL Server Analysis Services, Advance Data warehousing techniques, MDX scripting & deep integration with Excel 2007. The workshop is equipped with complete hands-on. Remember, this is a deep dive with in-depth sessions. Upon course completion, students will be able to create high performing cubes, query them using MDX and visualize the results in Excel 2007.This course has been delivered by Amit Bansal for Microsoft in India and US (Redmond) with customizations. Other key clients include HCL, Intel, Adobe, Accenture, Siemens, Infosys, Wipro and many other IT companies.

Course Description

This five-day instructor-led course teaches participants how to develop, implement & administer an Analysis Services solution for a given requirement. The course begins with a solid understanding of the need of Business Intelligence solutions in fast growing organizations. The course then covers basic and advance concepts of Data warehousing and how a DW is the most important foundation at the root of a BI solution. Many practical techniques of DW architect & design are discussed. DW concepts are followed by a series of in-depth sessions on developing SSAS solution using Business Intelligence Development Studio. Many intricacies, tips and tricks are discussed related to Unified Dimensional Modeling, Measures, Partitioning, Aggregations, Security, Deployment, etc to give the students real life experience (please see the TOC for more details). At the conclusion of SSAS development modules, students get deep dive with MDX scripting and dashboard creation with Excel 2007. Students are taught cube formulas extensively to create scorecards and graphical reports in Excel 2007. The course concludes with Performance tuning tips and how to apply them in your BI solution. All in all, this course provides very deep and comprehensive coverage of SQL Server Analysis Services 2008 including MDX scripting & EXCEL 2007 integration.

Course Benefits & Objectives

After completing this course, the participants will be able to:

- Explain the need of BI solutions
- Use SQL Server Analysis Services to implement analytical solutions.

- Create multidimensional analysis solutions with SQL Server Analysis Services.
- Implement dimensions and cubes in an Analysis Services solution.
- Implement measures and measure groups in an Analysis Services solution.
- Query a multidimensional Analysis Services solution.
- Customize an Analysis Services cube using features like KPIs, Actions, Perspectives & Translations.
- Deploy and secure an Analysis Services database.
- Maintain a multidimensional Analysis Services solution.
- Implement advance Data warehousing techniques
- Write simple and advance MDX scripts
- Create Scorecards and Dashboards in Excel 2007
- Implement performance tuning techniques

Please see course outline below for more details.

Target Audience

The primary audience for this course is individuals who design and maintain business intelligence solutions. These individuals work in environments where databases play a key role in their primary job and may perform database administration and maintenance as part of their primary job responsibilities.

The secondary audience for this course is individuals who develop applications that deliver content from SQL Server Analysis Services to the organization.

Prerequisites

This course requires that participants have at least 6 months of working experience in SQL Server 2000/2005 or SQL Server 2008 and should possess fundamental knowledge of databases.

Course Outline

Introduction to Business Intelligence

- Business Intelligence – What, Why & How
- History of Business Intelligence
- The need of Business Intelligence in today's businesses (The need for Data Analysis)
- Microsoft BI stack & timeline

Introduction to Data warehousing

- What is a data warehouse and why do you need it?
- Data warehouse definitions & terminology
- Data warehouse concepts – Basic Dimensional Modeling details
    - Facts, Dimensions, Measures, etc
    - Fact tables, Dimension tables, etc
- The approach of building a data warehouse

Advance Data warehousing concepts

- Data warehouse life cycle
- Advance Dimensional Modeling
    - Star schema
    - Snowflake schema
    - Granularity
    - Types of Dimensions
    - Types of Facts
    - Surrogate Keys
    - Slowly changing dimensions

Introduction to Analysis Services

- Fundamental OLAP concepts
- OLTP vs OLAP
- Analysis Services Architecture
- Installing Analysis Services
- Analysis Services Tools
- Key features of Analysis Services

Creating Multidimensional Analysis Solutions

- Introduction to Business Intelligence Development Studio
- Online Mode vs Project Mode
- Source Control versioning
- Working with Data Source
- Working with Data Source View
- Modifying Data Source & Data Source View
    - Creating & Modifying Named Calculations
    - Creating & Modifying Named Queries
    - Creating & Modifying Logical Primary Keys
    - Creating & Modifying Relationships
    - Creating New Diagrams
- Creating a simple cube
    - Cube Wizard
    - Dimensions Wizard
    - Considerations for Time Dimension
- Knowing the cube designer & relevant tabs
- Browsing the cube
    - Pivoting
    - Filtering

Working with Dimensions

- Revisiting Dimension Concepts
- All about hierarchies
    - Concepts & different types of hierarchies
    - Defining, configuring & implementing hierarchies
- Implementing different types of dimensions
- Exploring the Dimensions Editor and important properties / attributes
- Understanding & Configuring Dimensions storage
- Understanding and Configuring Attribute column bindings
- Understanding and Configuring Attribute relationships
    - Attribute Relationship designer
    - AMO Warnings
- Sorting & Grouping Attributes

Working with Measures and Measure Groups

- Configuring Measures & Display
- Creating & Configuring Measure Groups
- Understanding how measures are aggregated
- Relationship between measure groups and dimensions
- Working with the Dimensions Usage tab
- Measure group storage
- Understanding Proactive caching
- Understanding & configuring Partitions
- Understanding and configuring aggregations
    - Aggregation Designer
    - Simplified and enhanced Aggregation Design and Usage-Based Optimization Wizards
    - AMO Warnings

Advance Cube Functionality

- Understanding & Implementing Key Performance Indicators
  - KPI elements
  - Defining a KPI
  - Browsing KPIs
  - Integration with Excel
  - Integration with SharePoint
  - Retrieving KPIs with MDX
- Implementing Actions
  - Elements of Actions
  - Types of Actions
  - Integration with Excel
- Implementing Perspectives
- Implementing Translations
  - Implementing Cube Translations
  - Implementing Dimension Translations

Deploying & Securing an Analysis Services Database

- Deploying an Analysis Services
  - Deployment Techniques
  - Deploying a BI project
  - Deploying using Deployment Wizard
  - Generating a Deployment Script
  - Using Synchronize Database wizard
  - Deployment Best Practices with Real-Life scenario
- Securing an Analysis Services database
  - Analysis Services Security Model
  - Server Role
  - Database Role
  - Data Source & Cube permissions
  - Cell permissions
  - Dimensions & Dimension Data permission
  - Security Best Practices

Administering and Maintaining an Analysis Services Solution

- Understanding and configuring Processing Settings
  - Processing – Behind the scenes
  - Processing Options
  - Implementing Batch Processing
  - Using SSIS for processing
  - Processing Tips, Tricks & Best Practices
- Logging & Monitoring an Analysis Services Solution
  - Configuring Logging
  - Using SQL Server Profiler for Monitoring
  - Using Dynamic Management Views
  - Using System Monitor
- Backups & Restores
  - Considerations for Backup and Restore
  - Back up techniques and options
  - Restoring SSAS database

MDX Scripting

- MDX fundamentals
- Understanding querying architecture
- Intermediate MDX scripting
- Advance MDX scripting

Advance Business Intelligence functionality

- Excel Integration
  - Pivoting
  - Charting
  - Drill-through
- Understanding and writing cube formulas
- Creating dashboards in Excel 2007
- Integration with SharePoint
- Integration with SSRS

Performance Tuning

- Optimizing Dimension Design
- Optimizing Aggregations
- Using Partitions to enhance query performance
- Advance Processing techniques
- Optimizing Special Design Scenarios
- Tuning Server Resources
- Writing efficient MDX scripts

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