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SQL Server 2008 End-to-End Business Intelligence Workshop

5 Days (BI-BIE2E08-201-EN)

Description

Business intelligence solutions provide the infrastructure that enables users at all levels of a business to make better decisions based on more accurate and up-to-date information. This workshop focuses on teaching IT professionals the best practices and skills required to successfully design, build, deploy, and operate a business intelligence solution using SQL Server 2008 Integration Services, Analysis Services and Reporting Services.

Target Audience

This course is designed for IT professionals who are interested in learning how to implement Business Intelligence solutions on the Microsoft SQL Server platform. Basic knowledge of BI concepts is assumed and some experience with SQL Server is required.

Prerequisites

Before attending this course, it is recommended that students have the following skills:

- Basic knowledge of Business Intelligence
- Knowledge of relational database systems
- Experience with SQL Server database
- Basic knowledge of windows security

Course Objectives

Upon completion of this course, the student will be able to:

- Describe the process of building a business intelligence solution and identify where and how SSAS fits into the process.
- Create effective SSAS cubes complete with calculations, actions, aggregations, and more.
- Design solutions in SSAS that are both scalable and secure.
- Successfully manage and deploy SSAS cubes in a development/test/production environment.

Course Summary Outline

Day 1

Module Intro 01: Introduction to Business Intelligence

This module introduces BI and components of a BI solution and then discusses the various products that are available from Microsoft for implementing a BI solution and how those technologies fit into the BI component stack. We will then introduce in more detail the technologies that are part of the SQL Server BI Platform and also highlight some of the major changes in each of those technologies in 2008. We will also look at the various tools that are available for developing and managing the technologies.

- BI Practice
- Components of a BI solutions
- MS BI stack
- Intro to the MS SQL BI Platform
- Highlight some major changes between SQL Server 2005 and 2008
- Client Tools for development and management – also highlight differences from 2005

Module Intro 02: Preparing Data for Analytics

This module provides an introduction to dimensional modeling and lays the foundation for more detailed topics covered over the next few modules. We will cover Dimensional Modeling concepts including Fact and Dimension tables and how to implement a dimensional model within your organization. We will also address the needs for implementing dimensional models and talk about Data Warehousing and Data Marts. We will also briefly discuss processes for loading data into these dimensional tables.

- The Need
- Dimensional Modeling
- Dimensional Modeling Concepts

Module SSIS 01: Introduction to SSIS

This module introduces the various high-level features of SQL Server Integration Services and also introduces the development environment for SSIS

- The Need
- SSIS Components
- Changes in SQL Server 2008
- Package Components
- Data Sources and Connections

  LAB SSIS 01A: Creating a simple package

Module SSIS 02: Implementing workflows using SQL Server Integration Services

This module provides an introduction to the components of SQL Server Integration Services and the package. It also highlights changes in 2008 for in the control flow environment and explains how to use the components and features of SSIS to build process workflows.

- The Need
- Primary Package Objects
  - Tasks, Containers and Precedence Constraints
- Variables
- SSIS Expressions

LAB SSIS 02A: Implementing workflows in Microsoft SSIS

Day 2

Module SSIS 03: Processing data using SQL Server Integration Services

This module highlights the various components of a data flow environment and then explains how to use these components and features to implement ETL processes. This module does not go into great details around the internals of SSIS Data Flow.

- The Need
- Data Flow Components: Source and destination adapters, transformations, data flow paths
- Highlight: ADO.Net support
- Building data flows
- Highlight: Lookup Transform

LAB SSIS 03A: Processing Data using SSIS

Module SSIS 04: Loading Dimension Tables using SSIS

This module covers the specific components of the data flow that are used to implement ETL processes to load dimension tables.

- The Need
- Slowly Changing Dimension Concept
- Highlight: Slowly Changing Dimension Transform
- Other Dimension Load Types
- Highlight: MERGE statement support

LAB SSIS 04A: Creating Dimension Load Packages

Module SSIS 05: Loading Fact Tables using SQL Server Integration Services

This module covers the specific components of the data flow that are used to implement ETL processes to load fact tables.

- The Need
- Loading Fact Tables using SSIS Transformations
- Analysis Services Integration

LAB SSIS 05A: Creating Fact Load Packages

Module SSIS 06: Managing SQL Server Integration Services Packages

This module covers management and deployment aspects of SSIS packages.

- Logging
- Configuration Management
- Deploying

LAB SSIS 06A (Optional): Deploying and Scheduling SSIS Packages

Day 3

Module SSAS 01: Introduction to SQL Server Analysis Services

This module introduces key concepts and features in SQL Server Analysis Services and OLAP technologies. At the end of this module, attendees will learn how to build a basic cube and understand the power that it provides for analysis.

- The Need
- Introduction to OLAP Fundamentals
- The UDM and Benefits
- Analysis Services Fundamentals
- Basic Components of the UDM: Data Sources, Data Source Views, Cubes, Dimensions
- Components of a SQL Server Analysis Services Database
- Building a basic cube
- Deployment and processing

LAB SSAS 01A: Building a cube

Module SSAS 02: Customizing the UDM

Through this module, attendees will understand the various customization options that enhance usability and performance of the UDM and allow them to extend the usefulness of the data analysis via a “single-version of the truth”.

- The Need
- Introduction to the SSAS designer
- New design features in SSAS 2008
- Dimension customization: Dimension properties, attributes and hierarchies (Customization scenario/how-to approach)
- Cube customization: Cubes, cube dimensions, measure groups, measures (Customization scenario/how-to approach)
- Advanced SSAS database components: Dimension relationships, Calculations, KPI’s,

LAB SSAS 02A: Customizing the UDM

Day 4

Module SSAS 03: Advanced Features of SSAS UDM

This module covers some of the advanced administrative and security features for managing SSAS databases.

- Data Processing and Storage
- Measure Group Partitions
- Proactive Caching
- Aggregation and Usage Based Optimization (UBO)
- Role-based Security

Module SSAS 04: Introduction to MDX

This module provides an introduction to the Multi-Dimensional Expression (MDX) language for writing custom calculations and queries and building custom members.

- Overview of MDX
- Learning MDX
  - MDX Constructs
  - Member Functions
  - MDX Query Syntax

Module SSAS 05 [Optional]: Introduction to Data Mining

This module introduces Data Mining and provides an understanding of the business uses of data mining and also provides an overview of the data mining process.

- The Need
- Data Mining Process
- Data Mining Algorithms
- Changes in SQL Server 2008
- Data Mining add-ins in Excel 2007

LAB SSAS 05A [Optional]: Building a Data Mining Model

Module SSRS 01: Introduction to SQL Server Reporting Services

This module will introduce the Reporting Services, the architecture and components of SSRS. Additionally, we will look at the components of a Report and understand the features and functionality including new features in SSRS 2008.

- The Need
- SSRS 2008
- Report Features
- SSRS Architecture
- Core Components of SSRS
- Report Design Process
- Report Processing
- Deployment Scenario
- Reporting Services Security

Day 5

Module SSRS 02: Defining Reports using SQL Server Reporting Services

This module will familiarize people with the design tools for designing reports and explain features available to customize report look and functionality.

- Report Designer
- Data Sources and Datasets
- Query and Report Parameters
- Report Objects
    - Data Regions

LAB SSRS 02A: Build a Simple Report

Module SSRS 03: Customizing SSRS Reports

This module looks at advanced customization options for enhanced report interactivity and functionality.

- Expressions
- Report Interactivity
- Report Formatting
- Advanced Functionality

LAB SSRS 03A: Customizing Reports

Module SSRS 04: Ad-hoc Reporting with Report Builder

This topic introduces the self-services capabilities in Reporting Services using Report Models and Report Builder clients.

- Ad-hoc reporting
- Report Builder Client
- Building Report Models

LAB SSRS 04A: Building a Report Model

LAB SSRS 04B: Creating a Report using Report Builder 2.0

Module SSRS 05: Advanced SSRS Features

This module covers some of the management and security aspects of SSRS

- Report Access
- Linked Reports
- Subscription and Delivery
- Data Caching
- Report History
- Monitoring
- Security Considerations
- Upgrade Considerations

Module SSRS 06: Tying it all together

This is a wrap-up module that does a very quick overview of the topics we covered in the class.