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"Charting the Course ... ... to Your Success!"

Accelerated SQL Server 2012 Integration Services

Course Summary

Description

This 4-day instructor led training focuses on developing and managing SSIS 2012 in the enterprise. In this course, you will understand how to design, develop, deploy, and operate SSIS solutions—this involves ETL solutions (extraction, transformation, and loading) from source systems extractions, data integration, SSIS server administration and package execution.

Objectives

At the end of this course, students will be able to:

- Create and develop new SSIS projects and packages
- Determine when to use project mode versus package mode
- Apply SSIS to file and data management
- Understand and Apply ETL Concepts in SSIS including dimensions and fact table ETL and loading SSAS dimension and cubes
- Administer SSIS for server deployment and production execution

Topics

- SSIS Overview and Core Features
- SSIS Control Flow Objects and Features
- Applying Data Flow Transformations and Adapters
- Working With and Importing Files
- Data Source Extraction and Destination Optimization
- Data Quality and Cleansing
- Dimension ETL with SSIS
- Fact ETL with SSIS
- Processing Tabular and Multidimensional SSAS Objects in SSIS
- Project Deployment Model: Configuration, Deployment & Security
- Project Deployment Model: Execution and Reporting
- Package Deployment Model: Configuration and Deployment
- Package Deployment Model: Execution, Security & Logging
- Transactions and Restartability
- Optimization and Scalability

Audience

This course is intended for database professionals that are responsible for ETL or DBA activities related to data processing, data architecture planning, or SSIS administration.

The target audience for this session is IT professionals, DBAs and developers who want to learn the details of how to use SSIS to accomplish data integration, data warehouse loading, and how to administer SSIS through the development lifecycle to production.

Prerequisites

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

- This course is targeted at database professionals and developers with some experience in business intelligence solutions and SQL Server. This workshop requires no prior experience with SQL Server SSIS.

Duration

Four days

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Course Outline

I. SSIS Overview and Core Features
- A. How SSIS fits into the corporate data network and infrastructure
- B. Introduction to data integration, BI, and dimensional modeling
- C. SSIS features overview
- D. SQL Server 2012 tools
- *E. Lab 01: SSIS Development Environment Introduction*

II. SSIS Control Flow Objects and Features
- A. Control flow and data flow principles
- B. Control flow features
- C. Containers
- D. SSIS expression language
- E. Tasks and constraints
- F. Lab 02: Workflow Management in the Control Flow

III. Applying Data Flow Transformations and Adapters
- A. Data flow introduction and design environment
- B. Connecting the data flow to sources and destinations
- C. Transformations and paths
- D. Lab 03: Working with Data in the Data Flow

IV. Working With and Importing Files
- A. File-handling requirements and management
- B. Working with binary data
- C. Excel and 64-bit considerations
- D. Third-party custom components
- E. Lab 04: Importing and Processing FTP Sourced Files

V. Data Source Extraction and Destination Optimization
- A. Extraction optimization
- B. Incremental extraction and Change Data Capture
- C. Data loading optimization
- D. Lab 05: Incremental Extraction and ODBC Sources

VI. Data Quality and Cleansing
- A. Data profiling and cleansing basics
- B. Fuzzy operations
- C. Fuzzy Lookup
- D. Fuzzy Grouping
- E. Text mining
- F. Script component
- G. Data Quality Services
- H. Lab 06: Comparing the Fuzzy Lookup and DQS Cleansing Transformations

VII. Dimension ETL with SSIS
- A. Fact table ETL theory
- B. Fact loading concepts, columns, and mappings
- C. Workflow, precedence, and staging
- D. Identifying dimension surrogate keys
- E. Data preparation for fact tables
- F. Advanced concepts
- G. Lab 07: Dimension Table ETL

VIII. Fact ETL with SSIS
- A. Fact types and theory, Aspects of the fact table processing, Dimension lookups with the Lookup transformation, Missing Dimension Members, Measures and Calculations, Handling fact inserts and updates, Changing data grain, Processing Analysis Services Measure Group Partitions
- B. Lab 08: Fact Table ETL

IX. Processing Tabular and Multidimensional SSAS Objects in SSIS
- A. SSAS tabular and multidimensional
- B. Processing methods in SSIS
- C. Dynamic processing and partition creation Lab 09: Analysis Services Processing

X. Project Deployment Model: Configuration, Deployment & Security
- A. Project Deployment Model
- B. SSIS catalog features
- C. Project and package connections
- D. Project and package parameters
- E. Project Deployment Wizard
- F. SSIS environments
- G. Security and encryption
- *H.* Lab 10: SSIS Catalog Configurations and Project Deployment

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Course Outline (cont'd)

XI. Project Deployment Model: Execution and Reporting
- A. Project deployment model utilities
- B. Package execution with T-SQL and DTExec
- C. Server reporting and logging
- D. Lab 11: Executing Packages in the SSIS Catalog

XII. Package Deployment Model: Configuration and Deployment
- A. Package deployment model
- B. Package configurations
- C. Deploying packages
- *D.* Lab 12: Working with Package Configurations

XIII. Package Deployment Model: Execution, Security & Logging
- A. Package deployment model utilities
- B. Package execution
- C. Package security and encryption
- D. Package logging
- *E.* Lab 13: Package Logging and Execution

XIV. Transactions and Restartability
- A. SSIS transactions
- B. SQL Server database snapshots
- C. Restartability with checkpoints
- D. Debugging with breakpoints
- E. Lab 14: Working with Transactions and Checkpoints

XV. Optimization and Scalability
- A. SQL code versus SSIS pipeline
- B. Data flow engine internals
- C. General optimization techniques
- D. Performance root-cause analysis