ACUITY TRAINING

SQL Integration

SQL Integration Services
4 days

Microsoft SQL Server™
The enterprise relational database

Course Objectives

Upon successful completion of this course, delegates will be able to:

- Understand the Role SQL Server Integration Services Plays in Business Intelligence
- Create and Develop Integration Services Projects and Packages in SSDT
- Understand and Implement Control Flow Tasks
- Understand and Implement Data Flow Transforms and Components
- Implement Logging
- Debug and Implement Error Handling
- Implement Checkpoints and Transactions
- Deploy Integration Services Projects
- Manage and Secure Integration Services Projects and Packages
- Understand Basic Data Warehousing Concepts
- Manage Changing Data with the SSIS CDC Components
- Understand the Role of Data Quality Services (DQS)
- Understand the Role of Master Data Services (MDS)

Prerequisites

No prior knowledge of the subject matter is assumed. However, students should ideally be familiar with basic programming concepts, and understand the fundamental design of relational databases and data normalization. Some prior working knowledge of SQL Server 2014, and the use of SQL Server Management Studio, is assumed. Attendees should additionally be familiar with the SQL query language, in particular the SELECT, UPDATE, INSERT, and DELETE statements.

Introduction

This 4 day course is intended for IT professionals, business analysts, and developers who need to implement data transfer, or ETL (Extract, Transform, and Load), solutions by using Microsoft SQL Server 2014 Integration Services. Students will learn about the SQL Server Data Tools (SSDT) development environment to create SSIS projects and packages, work with Control Flow Tasks, and design Data Flows using a variety of transformations and data sources/destinations (including SQL Server databases, flat files, and Excel). Delegates will also learn about SSIS project and package management, deployment, debugging, error handling, and logging techniques. The training is delivered with plenty of illustrated examples and augmented with practical hands-on exercises.

With the course structure being fully modularised, customised versions of this course can also be devised and delivered. For example, clients interested in only the essentials of SSIS could attend just the first 3 days of the course, omitting the Advanced SSIS Concepts ordinarily covered on day 4.

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DAY 1, 2 & 3: SSIS ESSENTIALS

Introduction to SQL Server Integration Services
- Overview of SSIS

Getting Started
- Using the Import/Export Data Wizard
- Using SSDT to Explore a Package
- Exploring the SSDT Development Environment

Creating SSIS Projects in SSDT
- Creating a New SSIS Project and Package in SSDT Connection Managers

Designing Control Flow
- Introduction to Control Flow Tasks
- Precedence Constraints
- File System Task
- Script Task
- Execute SQL Task
- Execute Process Task
- Expression Task
- Send Mail Task
- FTP Task
- Execute Package Task
- Using the Data Flow Task

Designing the Data Flow
- Introduction to Data Flow Transforms and Components
- Exploring Data Sources
- Exploring Data Destinations
- Data Conversion Transform
- Derived Column Transform
- Implementing Data Viewers
- Aggregate Transform
- Sort Transform
- Lookup Transform
- Row Count Transform
- Union All Transform
- The Script Component
- Conditional Split Transform
- OLE DB Command Transform
- Fuzzy Lookup Transform
- Fuzzy Grouping Transform
- Implementing Variables and Expressions
- Implementing Parameters

Using Containers
- Sequence Container For
- Loop Container
- Foreach Loop Container

Logging and Troubleshooting Packages
- Logging Package Execution
- Using Event Handlers
- Implementing Breakpoints

Deploying and Managing Projects and Packages
- Create and Configure the SSIS Catalog Project Deployment
- Configure Deployed Projects and Packages Securing SSIS Packages
- Running Packages
- Scheduling Package Execution

DAY 4: ADVANCED SSIS CONCEPTS

Controlling Package Execution
- Master Packages Restarting Packages
- Package Transactions & Checkpoints

Data Warehousing
- Data Warehousing Basics
- The Data Profiling Task
- Loading Dimension Tables
- Using the Slowly Changing Dimension Transform
- Loading Fact Tables

Advanced ETL Scenarios
- Loading Data Incrementally
- Using SSIS CDC Components

Data Quality Concepts
- Introducing Data Quality Services (DQS)
- Introducing Master Data Services (MDS)

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