

Course HC470 - SQL Server 2005 Integration Services Boot Camp

This five-day, instructor-led course shows students how to use the new features of Integration Services to load operational data into the relational tables of a data warehouse.

Beginning with an overview of common activities related to integrating SQL Server with other data sources, this course continues with examples for using the new transformations as well as for working with deployed packages. Through a series of demonstrations and hands-on labs, you will work with common, practical, real-world examples to build SSIS packages that work with relational and non-relational data sources, manage referential integrity, handle slowly changing dimensions and other data warehousing challenges, and implement complex transformations. You will also learn how to use the debugging and error handling features in SSIS to detect, troubleshoot, and recover from errors that occur during package execution.

Who should attend:

This course is intended for business intelligence architects, data warehouse administrators, and application developers.

This course is written and taught by:



At Course Completion

At course completion, the student will be able to:

- Learn to design and manage real-world BI solutions from an industry expert
- Create a complete, end-to-end data transformation solution using SQL Server 2005 Integration Services
- Use SSIS in a BI or operational environment
- Create and manage Integration Services projects
- Implement and manage control flow, precedence, and logic
- Implement and manage efficient data flow using data sources, destinations, pipelines, and transformation components
- Use SSIS expressions to parse, derive, calculate, and manipulate data
- Use VB.NET script to write custom code and control logic
- Use checkpoints, events, and logging to recover and validate an ETL process
- Use checkpoints, error handling, logging, and events to debug and manage package execution

- Deploy a package to a development, test, and production server
- Use configurations to customize package execution
- Secure, encrypt, and password-protect a package
- Using Windows, command-line, and console tools to manage and execute packages
- Script and automate package execution
- Understand how Integration Services is used in a complete BI solution
- Create packages to populate data warehouse structures for analysis and reporting
- Optimize package design and execution based on your understanding of SSIS buffer and execution architecture
- Monitor, optimize, and manage package execution in a production environment
- Leave prepared to design and build efficient SSIS projects and to put them into production

Certified Professional Exams

There is no exam associated with this course.

Prerequisites

Students should meet the following prerequisites:

- Understanding of basic database design, administration, and implementation concepts.
- Knowledge of basic Transact-SQL syntax (SELECT, INSERT, UPDATE, and DELETE statements).
- Be familiar with basic relational design, administration, and implementation concepts.

The course materials, lectures, and lab exercises are in English. To benefit fully from our instruction, students need an understanding of the English language and completion of the prerequisites.

Course Outline

Getting Started with Integration Services

- Introduction to Integration Services
 - Integration Services Fundamentals
 - Common Applications for Integration Services
 - Data Transformation Services (DTS) vs. Integration Services
 - Overview of SSIS Components
- Building Your First Package
 - Exploring Business Intelligence Development Studio
 - Using the SSIS Import and Export Wizard
 - Reviewing Package Elements
 - Executing a Package

Designing Packages

- Extracting and Loading Data
 - Creating Connection Managers
 - Working with Data Flow Sources and Data Flow Destinations
 - Using Data Sources and Data Source Views
- Transforming Data
 - Using Data Flow Transformations
 - Building Expressions
 - Configuring Error Output
- Managing Workflow
 - Working with Tasks
 - Using Containers
 - Applying Precedence Constraints
- Debugging Packages
 - Using Control Flow Breakpoints
 - Adding Data Flow Data Viewers
 - Debugging Script Tasks

Managing Packages

- Managing Package Execution
 - Exploring Package Execution Options
 - Implementing Package Logging
 - Building an Audit Trail
- Deploying Packages
 - Managing Package Configurations
 - Using the Package Installation Wizard
 - Applying Security
 - Managing Packages on the SSIS Server
- Detecting and Recovering from Processing Errors
 - Detecting Upstream Errors
 - Exception Handling in Script Tasks
 - Implementing Event Handlers
 - Using Checkpoints
- Optimizing SSIS
 - Reviewing the Memory Buffer Architecture
 - Monitoring Execution Trees
 - Managing Buffer Properties
 - Managing Parallelism
 - Performance Monitoring

Applying SSIS to Data Warehousing

- Reviewing Data Warehouse Concepts
 - Defining Data Warehouse Objectives
 - Assessing Data Quality
 - Reviewing ETL Architecture Options
- Populating Data Warehouse Structures
 - Implementing Staging Tables
 - Loading Dimensions
 - Loading Fact Tables
- Applying Best Practices to SSIS Package Design
 - Designing Configurable Packages for Data Warehousing
 - Managing Referential Integrity
 - Managing Slowly Changing Dimensions
 - Handling Complex Transformations and Processes
 - Tracking Metadata and Data Lineage
 - Validating Data