SQL SERVER INTEGRATION SERVICES (55321)

Course Code: 821543

This course is similar to the retired Course 20767-C: Implementing a SQL Data Warehouse but focuses more on building packages, rather than the entire data warehouse design and implementation.

This five-day instructor-led course is intended for IT professionals who need to learn how to use SSIS to build, deploy, maintain, and secure Integration Services projects and packages, and to use SSIS to extract, transform, and load data to and from SQL Server.

This course is similar to the retired Course 20767-C: Implementing a SQL Data Warehouse but focuses more on building packages, rather than the entire data warehouse design and implementation.

What You'll Learn

At course completion

- Create sophisticated SSIS packages for extracting, transforming, and loading data
- Use containers to efficiently control repetitive tasks and transactions
- Configure packages to dynamically adapt to environment changes
- Use Data Quality Services to cleanse data
- Successfully troubleshoot packages
- Create and Manage the SSIS Catalog
- Deploy, configure, and schedule packages
- Secure the SSIS Catalog

Who Needs to Attend

The primary audience for this course is database professionals who need to fulfil a Business Intelligence Developer role. They will need to focus on hands-on work creating BI solutions including Data Warehouse implementation, ETL, and data cleansing.

Prerequisites

- Working knowledge of T-SQL and SQL Server Agent jobs is helpful, but not required.
- Basic knowledge of the Microsoft Windows operating system and its core functionality.

- Working knowledge of relational databases.
- Some experience with database design.

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CLASSROOM LIVE	$2,995 USD	5 Day

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VIRTUAL CLASSROOM LIVE	$2,995 USD	5 Day

Virtual Classroom Live Outline

Module 1: SSIS Overview

This module explains the purpose of SSIS and teaches how to use the Import/Export Wizard to exchange data between data structures.

Lessons

- Import/Export Wizard
- Exporting Data with the Wizard
- Common Import Concerns
- Quality Checking Imported/Exported Data

Module 2: Working with Solutions and Projects

In this module, students learn to work with SQL Server Data Tools (SSDT) to design and deploy reports.

Lessons

- Working with SQL Server Data Tools
- Understanding Solutions and Projects
- Working with the Visual Studio Interface

Module 3: Basic Control Flow

The Control Flow tab of the SSIS Designer is used to organize the general flow of your package execution. The control flow of a package includes different element types, such as tasks, containers, and precedence constraints. Each of these element types has a set of properties that you will use to define and manage individual instances of these elements. In this module, students learn to add containers or tasks from the SSIS Toolbox to the Control Flow Designer.

Lessons

- Working with Tasks
- Understanding Precedence Constraints

- Annotating Packages
- Grouping Tasks
- Package and Task Properties
- Connection Managers
- Favorite Tasks

Module 4: Common Tasks

Microsoft has organized the tasks in the Common section of the SSIS Toolbox alphabetically. This module will touch on the functionality of each of these tasks, and provide Try It exercises for the tasks that are most commonly seen in classes and companies.

Lessons

- Analysis Services Processing
- Data Profiling Task
- Execute Package Task
- Execute Process Task
- Expression Task
- File System Task
- FTP Task
- Hadoop Task
- Script Task Introduction
- Send Mail Task
- Web Service Task
- XML Task

Module 5: Data Flow Sources and Destinations

In this module, students will learn to work with data flow sources and destinations.

Lessons

- The Data Flow Task
- The Data Flow SSIS Toolbox
- Working with Data Sources
- SSIS Data Sources
- Working with Data Destinations
- SSIS Data Destinations

Module 6: Data Flow Transformations

In this module, students learn about transformations, which allow you to modify data in the data flow pipeline.

Lessons

- Transformations
- Configuring Transformations

Module 7: Making Packages Dynamic

In this module, students will learn to make SSIS packages dynamic.

Lessons

- Features for Making Packages Dynamic
- Package Parameters
- Project Parameters
- Variables
- SQL Parameters
- Expressions in Tasks
- Expressions in Connection Managers
- After Deployment
- How It All Fits Together

Module 8: Containers

In this module, students learn to use containers, which provide a way to organize tasks that need to be managed together as a group.

Lessons

- Sequence Containers
- For Loop Containers
- Foreach Loop Containers

Module 9: Troubleshooting and Package Reliability

This module puts together common troubleshooting methods along with some of the reliability features for SSIS all in one place.

Lessons

- Understanding MaximumErrorCount
- Breakpoints
- Redirecting Error Rows
- Logging
- Event Handlers
- Using Checkpoints
- Transactions

Module 10: Deploying to the SSIS Catalog

The project deployment model provides the framework for new functionality such as the SSIS catalog, environments, project level parameters and project level connection managers. This module explains how to deploy projects to the SSIS catalog.

Lessons

- The SSIS Catalog
- Deploying Projects
- Working with Environments
- Executing Packages in SSMS
- Executing Packages from the Command Line
- Deployment Model Differences

Module 11: Installing and Administering SSIS

In this module, students will learn to install, upgrade, and administer SSIS.

Lessons
- Installing SSIS
- Upgrading SSIS
- Managing the SSIS Catalog
- Viewing Built-in SSIS Reports
- Managing SSIS Logging and Operation Histories
- Automating Package Execution

Module 12: Securing the SSIS Catalog

In addition to the standard SQL Server database and instance permissions that can be configured like any other database, the SSIS catalog has special pre-defined database roles and additional permissions that can be assigned for the management and execution of SSIS packages. In this module, students learn to work with roles and permissions to secure the SSIS catalog.

Lessons
- Principals
- Securables
- Grantable Permissions
- Granting Permissions
- Configuring Proxy Accounts

Virtual Classroom Live Labs

Lab: SSIS Overview
- Use the Import/Export Wizard from SSMS

Lab: Working with Solutions and Projects
- Import and run a package in SSDT-BI

Lab: Basic Control Flow
- Precedence Constraints and Execute SQL Task

Lab: Common Tasks
- Create a package to copy a file and send an email message on completion
- Create a package to perform data profiling and then review the results
- Create a master package and test the execution flow of the child packages

Lab: Data Flow Sources and Destinations
- Working with Data Sources and Destinations

Lab: Data Flow Transformations
- Working with Derived Column Transformations
- Working with Lookup Transformations

Lab: Making Packages Dynamic

- Making a Package Dynamic

Lab: Containers

- Use a Foreach Loop container to send a custom email to the names found in a database view

Lab: Troubleshooting and Package Reliability

- Creating a Script Task to Merge Error Messages
- Configure a package to use transactions

Lab: Deploying to the SSIS Catalog

- Deploying a Project to the SSIS Catalog
- Manually executing a Package

Lab: Installing and Administering SSIS

- Automating Package Execution

Lab: Securing the SSIS Catalog

- Securing the SSIS Catalog

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PRIVATE GROUP TRAINING	5 Day

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