MOC 55120 A Quick Microsoft SQL Server 2012-2014 Integration Services

Course Summary

Description

This two-day instructor-led course is intended for those that are new to SQL Server Integration Services or are interested in learning the features available. This course uses an instructor-led topic explanation, instructor performing detailed demonstrations, then the student performing exercises to duplicate what the instructor demonstrated. This style of training is a combination of traditional classroom training and mentored learning. Additionally, videos of the demonstrations performed by the course author are included with the course as a take-away. The course completes with additional scenario-based labs to reinforce the course content.

Objectives

By the end of this course, participants will be able to:
- Understand packages.
- Manage with Control Flow.
- Move data with Data Flow.
- Understand variables.
- Understand parameters.
- Utilize the Import/Export Wizard.
- Work in the Explore window.
- Create SQL Server Integration Services packages.
- Utilize Connection Managers.
- Code the Script Task.
- Utilize Looping and Sequence Tasks.
- Utilize Data Preparation Tasks.
- Load data with the Analysis Services Tasks.
- Use the Workflow Tasks.
- Manage SQL with the SQL Tasks.
- Perform Administration of SQL using the SQL Management Objects Tasks.
- Optimize sources for extraction.
- Use Destinations and understand choices.
- Examine the Transformation and other Tasks (about 25 of them).
- Create dynamic packages.
- Utilize SQL Server Integration Services data typing.
- Define and use variables and parameters.
- Use expressions in packages.
- Utilize sequences in a container.
- Utilize container loops.
- Perform joins with the Lookup Transformation.
- Perform joins with the Merge Transformation.
- Examine the SSIS engine.
- Use the best practices.
- Design to troubleshoot: using Precedence Constraints.
- Work with advanced logging and reporting.
- Handle errors.
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Course Summary (cont’d)

- Understand how to choose the Script Task or Script Component.
- Work with XML.
- Use package hierarchies: Parent Child.
- Understand deployment strategies.
- Understand how to use what they’ve learned in real-world scenarios.

Topics

- Course Overview
- SQL Server Integration Services Architecture
- SQL Server Integration Services Tools
- SQL Server Integration Services Tasks
- Data Flow
- Variables, Parameters and Expressions
- Containers
- Performing Joins
- Tuning SQL Server Integration Services Packages
- Debugging SQL Server Integration Services Packages
- Common SQL Server Integration Services Design Patterns
- Installing, Upgrading, and Migrating to Windows 7

Audience

This course is intended for IT Professionals.

Prerequisites

There are no prerequisites for this course.

Duration

Two days
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Course Outline

I. Course Overview
This module explains how the class will be structured and introduces course materials and additional administrative information.
   A. Introduction
   B. Course Materials
   C. Facilities
   D. Prerequisites
   E. What We’ll Be Discussing

II. SQL Server Integration Services Architecture
In this module we will explore architecture and version changes of SQL Server Integration Services. We’ll then cover the building blocks needed to understand packages and how they are created.
   A. Version Changes of SSIS From 2008-2012
   B. The SQL Server Integration Service
   C. Understanding Packages
   D. Managing with Control Flow
   E. Moving Data with Data Flow
   F. Understanding Variables
   G. Understanding Parameters

Lab : SQL Server Integration Services Tools
- Utilizing the Import/Export Wizard
- Working in the Explore Window
- Creating SQL Server Integration Services Packages
- Utilizing Connection Managers

III. SQL Server Integration Services Tools
In this module we will learn about and utilize the tools available to assist with package creation.
   A. Utilizing the Import/Export Wizard
   B. Working in the Explore Window
   C. Creating SQL Server Integration Services Packages
   D. Utilizing Connection Managers

Lab : SQL Server Integration Services Tools
- Managing with Control Flow
- Moving Data with Data Flow
- Understanding Variables
- Understanding Parameters

IV. SQL Server Integration Services Tasks
SSIS tasks are the foundation of the Control Flow in SSIS. In this module we will walk through tasks and utilize them.
   A. Coding the Script Task
   B. Looping and Sequence Tasks
   C. Utilizing Data Preparation Tasks
   D. Data Loading with the Analysis Services Tasks
   E. Using the Workflow Tasks
   F. Managing SQL with the SQL Tasks
   G. Administration of SQL Using the SQL Management Objects Tasks

Lab : SQL Server Integration Services Tasks
- Coding the Script Task
- Utilizing Looping and Sequence Tasks
- Utilizing Data Preparation Tasks
- Data Loading with the Analysis Services Tasks
- Using the Workflow Tasks
- Managing SQL with the SQL Tasks
- Administration of SQL Using the SQL Management Objects Tasks

V. Data Flow
The Data Flow Task is where the bulk of your data heavy lifting occurs in SSIS. In this module we’ll discuss methods for optimizing sources and explain destination options.
   A. Optimizing Sources for Extraction
   B. Using Destinations and Understanding choices
   C. Examining the Transformation and Other Tasks (about 25 of them)
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Course Outline (cont’d)

Lab : Data Flow
- Optimizing Sources for Extraction
- Using Destinations and Understanding choices
- Examining the Transformation and Other Tasks (about 25 of them)

VI. Variables, Parameters and Expressions
At one point or another, when utilizing SSIS packages, you will encounter the need for dynamic capabilities. This module aims to give you an understanding of how expressions work, and how variables and parameters set up expressions on your SSIS project.
- Creating Dynamic Packages
- Utilizing SQL Server Integration Services Data Typing
- Define and Use Variables and Parameters
- Using Expressions in Packages

Lab : Variables, Parameters and Expressions
- Creating Dynamic Packages
- Utilizing SQL Server Integration Services DataTyping
- Define and Use Variables and Parameters
- Using Expressions in Packages

VII. Containers
Containers are objects in SQL Server Integration Services that provide structure to packages and services to tasks. In this module we will explain how to create and configure containers, and utilize them effectively.
- Overview of Containers
- Utilizing Sequences in a Container
- Utilizing Container Loops

Lab : Containers
- Utilizing Sequences in a Container
- Utilizing Container Loops

VIII. Performing Joins
By using joins, you can retrieve data from two or more tables based on logical relationships between the tables. In this module we will explore joins and demonstrate how to use them.
- Performing Joins with the Lookup Transformation
- Performing Joins with the Merge Transformation
- Utilizing Cache Modes in Joins

Lab : Performing Joins
- Performing Joins with the Lookup Transformation
- Performing Joins with the Merge Transformation

IX. Tuning SQL Server Integration Services Packages
Before putting your package into production, it is beneficial to take some time to review your package with an eye toward preventing, or at least mitigating, performance problems. In this module we will take a close look at how the SSIS engine works and cover best practices to ensure proper performance.
- Examining the SSIS Engine
- Using the Best Practices

Lab : Tuning SQL Server Integration Services Packages
- Examining the SSIS Engine
- Using the Best Practices

X. Debugging SQL Server Integration Services Packages
This module describes procedures for debugging SSIS packages and follows with a section on error handling.
- Designing to Troubleshoot: Using Precedence Constraints
- Working with Advanced Logging and Reporting
- Handling Errors

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Course Outline (cont’d)

Lab: Debugging SQL Server Integration Services Packages
- Designing to Troubleshoot: Using Precedence Constraints
- Working with Advanced Logging and Reporting
- Handling Errors

XI. Common SQL Server Integration Services Design Patterns
Design patterns help to solve common problems encountered when developing data integration solutions. In this module we’ll discuss how to choose among certain options, and cover deployment strategies.
  A. Choosing the Script Task or Script Component
  B. Working with XML
  C. Using Package Hierarchies: Parent Child
  D. Understanding Deployment Strategies

Lab: Common SQL Server Integration Services Design Patterns
- Working with XML
- Using Package Hierarchies: Parent Child