20767: Implementing a SQL Data Warehouse

Duration: 5 Days
Method: Instructor-Led Training (ILT) | Live Online Training

Course Description

This course provides participants with the knowledge and skills to provision a Microsoft® SQL Server® database. It covers SQL Server provision both on-premises and in Azure® and covers installing from new and migrating from an existing install.

Target Audience

This course is intended for:

- 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

To attend this course, candidates must have:

- Basic knowledge of the Microsoft® Windows® operating system and its core functionality.
- Working knowledge of relational databases.
- Some experience with database design.

Course Objectives

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

- Describe the key elements of a data warehousing solution.
- Describe the main hardware considerations for building a data warehouse.
- Implement a logical design for a data warehouse.
- Implement a physical design for a data warehouse.
- Create columnstore indexes.
- Implementing an Azure SQL Data Warehouse.
- Describe the key features of SSIS.
- Implement a data flow by using SSIS.
- Implement control flow by using tasks and precedence constraints.

Course Objectives *Continued*

- Create dynamic packages that include variables and parameters.
- Debug SSIS packages.
- Describe the considerations to implement an ETL solution.
- Implement Data Quality Services.
- Implement a Master Data Services model.
- Describe how you can use custom components to extend SSIS.
- Deploy SSIS projects.
- Describe BI and common BI scenario.

Course Topics

Module 1: Introduction to Data Warehousing

- Overview of Data Warehousing
- Considerations for a Data Warehouse Solution

Module 2: Planning Data Warehouse Infrastructure

- Considerations for Data Warehouse Infrastructure
- Planning Data Warehouse Hardware

Module 3: Designing and Implementing a Data Warehouse

- Data Warehouse Design Overview
- Designing Dimension Tables
- Designing Fact Tables
- Physical Design for a Data Warehouse

Module 4: Columnstore Indexes

- Introduction to Columnstore Indexes
- Creating Columnstore Indexes
- Working with Columnstore Indexes

Module 5: Implementing an Azure SQL Data Warehouse

- Advantages of Azure SQL Data Warehouse
- Implementing an Azure SQL Data Warehouse
- Developing an Azure SQL Data Warehouse
- Migrating to an Azure SQ Data Warehouse
- Copying Data with the Azure Data Factory

Module 6: Creating an ETL Solution

- Introduction to ETL with SSIS
- Exploring Source Data
- Implementing Data Flow

Module 7: Implementing Control Flow in an SSIS Package

- Introduction to Control Flow
- Creating Dynamic Packages
- Using Containers
- Managing Consistency

Course Topics

Module 8: Debugging and Troubleshooting SSIS Packages
- Debugging an SSIS Package
- Logging SSIS Package Events
- Handling Errors in an SSIS Package

Module 9: Implementing a Data Extraction Solution
- Introduction to Incremental ETL
- Extracting Modified Data
- Loading Modified Data
- Temporal Tables

Module 10: Enforcing Data Quality
- Introduction to Data Quality
- Using Data Quality Services to Cleanse Data
- Using Data Quality Services to Match Data

Module 11: Using Master Data Services
- Introduction to Master Data Services
- Implementing a Master Data Services Model
- Hierarchies and Collections
- Creating a Master Data Hub

Module 12: Extending SQL Server Integration Services (SSIS)
- Using Scripting in SSIS
- Using Custom Components in SSIS

Module 13: Deploying and Configuring SSIS Packages
- Overview of SSIS Deployment
- Deploying SSIS Projects
- Planning SSIS Package Execution

Module 14: Consuming Data in a Data Warehouse
- Introduction to Business Intelligence
- An Introduction to Data Analysis
- Introduction to Reporting
- Analysing Data with Azure SQL Data Warehouse

LABS INCLUDED