



20767C - Version: 1

01 May 2021

Implementing a SQL Data Warehouse



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 **5 days Course**

Description:

This five-day instructor-led course provides students with the knowledge and skills to provision a Microsoft SQL Server database. The course covers SQL Server provision both on-premise and in Azure, and covers installing from new and migrating from an existing install.

Intended audience:

The primary audience for this course are 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:

Basic knowledge of the Microsoft Windows operating system and its core functionality.

Working knowledge of relational databases.

Some experience with database design.

Objectives:

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

Create dynamic packages that include variables and parameters

Debug SSIS packages

Describe the considerations for 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 scenarios

Topics:

Module 1: Introduction to Data Warehousing

- Overview of Data Warehousing
- Considerations for a Data Warehouse Solution
- Lab : Exploring a Data Warehouse Solution

Module 2: Planning Data Warehouse Infrastructure

- Considerations for data warehouse infrastructure.
- Planning data warehouse hardware.
- Lab : Planning Data Warehouse Infrastructure

Module 3: Designing and Implementing a Data Warehouse

- Data warehouse design overview
- Designing dimension tables
- Designing fact tables
- Physical Design for a Data Warehouse
- Lab : Implementing a Data Warehouse Schema

Module 4: Columnstore Indexes

- Introduction to Columnstore Indexes
- Creating Columnstore Indexes
- Working with Columnstore Indexes
- Lab : Using 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
- Lab : Implementing an Azure SQL Data Warehouse

Module 6: Creating an ETL Solution

- Introduction to ETL with SSIS
- Exploring Source Data
- Implementing Data Flow
- Lab : Implementing Data Flow in an SSIS Package

Module 7: Implementing Control Flow in an SSIS Package

- Introduction to Control Flow
- Creating Dynamic Packages
- Using Containers
- Managing consistency.
- Lab : Implementing Control Flow in an SSIS Package
- Lab : Using Transactions and Checkpoints

Module 8: Debugging and Troubleshooting SSIS Packages

- Debugging an SSIS Package

- Logging SSIS Package Events
- Handling Errors in an SSIS Package
- Lab : Debugging and Troubleshooting an SSIS Package

Module 9: Implementing a Data Extraction Solution

- Introduction to Incremental ETL
- Extracting Modified Data
- Loading modified data
- Temporal Tables
- Lab : Extracting Modified Data
- Lab : Loading a data warehouse

Module 10: Enforcing Data Quality

- Introduction to Data Quality
- Using Data Quality Services to Cleanse Data
- Using Data Quality Services to Match Data
- Lab : Cleansing Data
- Lab : De-duplicating 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
- Lab : Implementing Master Data Services

Module 12: Extending SQL Server Integration Services (SSIS)

- Using scripting in SSIS
- Using custom components in SSIS
- Lab : Using scripts

Module 13: Deploying and Configuring SSIS Packages

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

Module 14: Consuming Data in a Data Warehouse

- Introduction to Business Intelligence
- An Introduction to Data Analysis
- Introduction to reporting
- Analyzing Data with Azure SQL Data Warehouse
- Lab : Using a data warehouse