

(20767B) – Implementing a SQL Data Warehouse

OBJECTIVE

This instructor led course describes how to implement a data warehouse platform to support a BI solution. Students will learn how to create a data warehouse with Microsoft® SQL Server® 2016 and with Azure SQL Data Warehouse, to implement ETL with SQL Server Integration Services, and to validate and cleanse data with SQL Server Data Quality Services and SQL Server Master Data Services.

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 Building a Data Warehouse
- Data Warehouse Reference Architectures and Appliances

Module 3: Designing and Implementing a Data Warehouse

- Logical Design for a Data Warehouse
- 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

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

Module 8: Debugging and Troubleshooting SSIS Packages

- Debugging an SSIS Package
- Logging SSIS Package Events
- Handling Errors in an SSIS Package

Module 9: Implementing an Incremental ETL Process

- Introduction to Incremental ETL
- Extracting 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

- Master Data Services Concepts
- Implementing a Master Data Services Model
- Managing Master Data
- Creating a Master Data Hub

Module 12: Extending SQL Server Integration Services (SSIS)

- Using Custom Components in SSIS
- Using Scripting in SSIS

Module 13: Deploying and Configuring SSIS Packages

- Overview of SSIS Deployment
- Deploying SSIS Projects
- Planning SSIS Package Execution

Module 14: Implementing an Incremental ETL Process

- Introduction to Business Intelligence
- Introduction to Reporting
- An Introduction to Data Analysis
- Analyzing Data with Azure SQL Data Warehouse

After completing this course, students 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
- 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

PREREQUISITES

This course requires that you meet the following prerequisites:

- Basic knowledge of the Microsoft Windows operating system and its core functionality.
- Working knowledge of Transact-SQL.
- Working knowledge of relational databases.

TRAINING APPROACH

This course includes lectures, course notes, exercises and hands-on practice.

COURSE DURATION

24 Hours (in 3 days)

Time: 9:00am to 6:00pm

Lunch Time: 1:00pm to 2:00pm

CERTIFICATION COMPLETION

A certificate of completion is provided for all trainees attending the course