Implementing a Data Warehouse with Microsoft SQL Server 2014

Course: 20463

Course Details

Audience(s): IT Professional(s)

Technology: Microsoft SQL Server 2014

Duration: 40 Hours

About This Course

This forty hours instructor-led course 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® 2014, implement ETL with SQL Server Integration Services, and validate and cleanse data with SQL Server Data Quality Services and SQL Server Master Data Services. This course is designed for customers who are interested in learning SQL Server 2012 or SQL Server 2014. It covers the new features in SQL Server 2014, but also the important capabilities across the SQL Server data platform.

Audience Profile

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. Primary responsibilities include:

- Implementing a data warehouse.
- Developing SSIS packages for data extraction, transformation, and loading.
- Enforcing data integrity by using Master Data Services.
- Cleansing data by using Data Quality Services.

Course Content

Module 1: Introduction to Data Warehousing

Lessons

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

Lab: Exploring a Data Warehousing Solution

Module 2: Data Warehouse Hardware Considerations

Lessons

- Considerations for building a Data Warehouse
- Data Warehouse Reference Architectures and Appliances

Lab: Planning Data Warehouse Infrastructure

Module 3: Designing and Implementing a Data Warehouse

Lessons

- Logical Design for a Data Warehouse
- Physical design for a data warehouse

Lab: Implementing a Data Warehouse Schema

Module 4: Creating an ETL Solution with SSIS

Lessons

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

Lab: Implementing Data Flow in an SSIS Package

Module 5: Implementing Control Flow in an SSIS Package

Lessons

- 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 6: Debugging and Troubleshooting SSIS Packages

Lessons

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

Lab: Debugging and Troubleshooting an SSIS Package

Module 7: Implementing an Incremental ETL Process

Lessons

- Introduction to Incremental ETL
- Extracting Modified Data
- Loading Modified data

Lab: Extracting Modified Data
Lab: Loading Incremental Changes

Module 8: Enforcing Data Quality

Lessons

- 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 9: Using Master Data Services

Lessons

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

Lab: Implementing Master Data Services

Module 10: Extending SQL Server Integration Services

Lessons

- Using Scripts in SSIS
- Using Custom Components in SSIS

Lab: Using Custom Components and Scripts

Module 11: Deploying and Configuring SSIS Packages

Lessons

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

Lab: Deploying and Configuring SSIS Packages

Module 12: Consuming Data in a Data Warehouse

Lessons

- Introduction to Business Intelligence
- Introduction to Reporting
- An Introduction to Data Analysis

Lab: Using Business Intelligence Tools

At This Course Completion

At completing this course the student will be able to:

- Describe data warehouse concepts and architecture considerations.
- Select an appropriate hardware platform for a data warehouse.
- Design and implement a data warehouse.
- Implement Data Flow in an SSIS Package.
- Implement Control Flow in an SSIS Package.
- Debug and Troubleshoot SSIS packages.
- Implement an ETL solution that supports incremental data extraction.
- Implement an ETL solution that supports incremental data loading.
- Implement data cleansing by using Microsoft Data Quality Services.
- Implement Master Data Services to enforce data integrity.
- Extend SSIS with custom scripts and components.
- Deploy and Configure SSIS packages.
- Describe how BI solutions can consume data from the data warehouse.