Microsoft 20767 - Implementing a SQL Data Warehouse

Length	Price	Version
5 days	**$4290.00** (inc GST)	**B**

Overview

This 5-day 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.

Skills Gained

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 implementing 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

Key Topics

Module 1: Introduction to Data Warehousing

This module describes data warehouse concepts and architecture consideration.

Lessons

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

Lab : Exploring a Data Warehouse Solution

- Exploring data sources
- Exploring an ETL process
- Exploring a data warehouse

Module 2: Planning Data Warehouse Infrastructure

This module describes the main hardware considerations for building a data warehouse.

Lessons

- Considerations for data warehouse infrastructure.
- Planning data warehouse hardware.

Lab : Planning Data Warehouse Infrastructure

- Planning data warehouse hardware

Module 3: Designing and Implementing a Data Warehouse

This module describes how you go about designing and implementing a schema for a data warehouse.

Lessons

- Designing dimension tables
- Designing fact tables
- Physical Design for a Data Warehouse

Lab : Implementing a Data Warehouse Schema

- Implementing a star schema
- Implementing a snowflake schema
- Implementing a time dimension table

Module 4: Columnstore Indexes

This module introduces Columnstore Indexes.

Lessons

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

Lab : Using Columnstore Indexes

- Create a Columnstore index on the FactProductInventory table
- Create a Columnstore index on the FactInternetSales table
- Create a memory optimized Columnstore table

Module 5: Implementing an Azure SQL Data Warehouse

This module describes Azure SQL Data Warehouses and how to implement them.

Lessons

- 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

- Create an Azure SQL data warehouse database
- Migrate to an Azure SQL Data warehouse database
- Copy data with the Azure data factory

Module 6: Creating an ETL Solution

At the end of this module you will be able to implement data flow in a SSIS package.

Lessons

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

Lab : Implementing Data Flow in an SSIS Package

- Exploring source data
- Transferring data by using a data row task
- Using transformation components in a data row

Module 7: Implementing Control Flow in an SSIS Package

This module describes 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

- Using tasks and precedence in a control flow
- Using variables and parameters
- Using containers

Lab : Using Transactions and Checkpoints

- Using transactions
- Using checkpoints

Module 8: Debugging and Troubleshooting SSIS Packages

This module describes how to debug and troubleshoot SSIS packages.

Lessons

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

Lab : Debugging and Troubleshooting an SSIS Package

- Debugging an SSIS package
- Logging SSIS package execution
- Implementing an event handler
- Handling errors in data flow

Module 9: Implementing a Data Extraction Solution

This module describes how to implement an SSIS solution that supports incremental DW loads and changing data.

Lessons

- Introduction to Incremental ETL
- Extracting Modified Data
- Loading modified data
- Temporal Tables

Lab : Extracting Modified Data

- Using a datetime column to incrementally extract data
- Using change data capture
- Using the CDC control task
- Using change tracking

Lab : Loading a data warehouse

- Loading data from CDC output tables
- Using a lookup transformation to insert or update dimension data
- Implementing a slowly changing dimension
- Using the merge statement

Module 10: Enforcing Data Quality

This module describes how to implement data cleansing by using Microsoft Data Quality services.

Lessons

- Introduction to Data Quality
- Using Data Quality Services to Cleanse Data
- Using Data Quality Services to Match Data

Lab : Cleansing Data

- Creating a DQS knowledge base
- Using a DQS project to cleanse data
- Using DQS in an SSIS package

Lab : De-duplicating Data

- Creating a matching policy
- Using a DS project to match data

Module 11: Using Master Data Services

This module describes how to implement master data services to enforce data integrity at source.

Lessons

- Introduction to Master Data Services
- Implementing a Master Data Services Model
- Hierarchies and collections
- Creating a Master Data Hub

Lab : Implementing Master Data Services

- Creating a master data services model
- Using the master data services add-in for Excel
- Enforcing business rules
- Loading data into a model
- Consuming master data services data

Module 12: Extending SQL Server Integration Services (SSIS)

This module describes how to extend SSIS with custom scripts and components.

Lessons

- Using scripting in SSIS
- Using custom components in SSIS

Lab : Using scripts

- Using a script task

Module 13: Deploying and Configuring SSIS Packages

This module describes how to deploy and configure SSIS packages.

Lessons

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

Lab : Deploying and Configuring SSIS Packages

- Creating an SSIS catalog
- Deploying an SSIS project
- Creating environments for an SSIS solution
- Running an SSIS package in SQL server management studio
- Scheduling SSIS packages with SQL server agent

Module 14: Consuming Data in a Data Warehouse

This module describes how to debug and troubleshoot SSIS packages.

Lessons

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

Lab : Using a data warehouse

- Exploring a reporting services report
- Exploring a PowerPivot workbook
- Exploring a power view report

Target 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.

We can also deliver and customise this training course for larger groups – saving your organisation time, money and resources. For more information, please contact us on 1800 853 276.

Prerequisites

In addition to their professional experience, students who attend this training should already have the following technical knowledge:

- At least 2 years' experience of working with relational databases, including:

- Designing a normalized database.
- Creating tables and relationships.
- Querying with Transact-SQL.
- Some exposure to basic programming constructs (such as looping and branching).
- An awareness of key business priorities such as revenue, profitability, and financial accounting is desirable.

The supply of this course by DDLS is governed by the booking terms and conditions. Please read the terms and conditions carefully before enrolling in this course, as enrolment in the course is conditional on acceptance of these terms and conditions.

ddls

© 2017 DDLS Australia Pty Ltd. All Rights Reserved