Implementing a Microsoft SQL 2016 Data Warehouse (MS-20767)

Modality: Virtual Classroom

Duration: 5 Days

SATV Value: 5

About this Course:

This is an intermediate-level 5-day training program covering the fundamentals of Microsoft SQL 2016 Data Warehousing and is specifically designed for Database Professionals & Business Intelligence Developers. Professionals will get to learn the fundamental skills and knowledge of provisioning Microsoft SQL Database in a business enterprise and organization. This course helps professionals learn the essentials skills needed to pursue a successful career as a Database Administrator. On average, a professional Database Administrator earns $71,429 annually.

Implementing a Microsoft SQL 2016 Data Warehouse Course covers the key concepts of both on-premises and Azure SQL Server Deployment & Provision. Professionals get to learn the art of installing a new server from scratch and also get to know the basics of migrating from an existing database.

Course Objectives:

The core objective of this course is to help professionals gain a better knowledge and sound understanding of the following key concepts:

- Data Warehousing Solution Essentials & Logical Design Implementation
- Data Warehouse Development Hardware Considerations
- Column Index Creation and Data Warehouse Physical Design
- Microsoft Azure SQL Data Warehouse Implementation
- Fundamentals of SSIS and Data Flow Implementation
- Control Flow Implementation with Precedence & Tasks Constraints
- Parameters & Variables of Dynamic Package Creation
- Data Quality Service Implementation & SSIS Packages Debugging
- ETL Solution Implementation Considerations and Master Data Service Implementation
- SSIS Extension with Custom Components & SSIS Projects Deployment
- Getting to Know BI and Major BI Scenarios

Audience:

This course is tailored for the following group of professionals and interested candidates:

- Database Professionals
- Business Intelligence Developers
- Professionals liable for Implementing Data Warehouse & Data Cleansing
- Developers Creating & Developing BI Solutions

Prerequisites:

Professionals planning to enroll in Implementing a Microsoft SQL 2016 Data Warehouse (MS-20767) Course must comply with the following prerequisites:

- Foundational Knowledge of the Core Functionalities of Microsoft Windows
- Familiarity with Relational Databases and Database Design

Course Outline:

Module 1: Introduction to Data Warehousing

Describe data warehouse concepts and architecture considerations

Lessons

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

Lab: Exploring a Data Warehouse Solution

After completing this module, you will be able to:

- Describe the key elements of a data warehousing solution
- Describe the key considerations for a data warehousing solution

Module 2: Planning Data Warehouse Infrastructure

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

Lessons

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

Lab: Planning Data Warehouse Infrastructure

After completing this module, you will be able to:

- Describe the main hardware considerations for building a data warehouse
- Explain how to use reference architectures and data warehouse appliances to create a data warehouse

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

- Logical Design for a Data Warehouse
- Physical Design for a Data Warehouse

Lab: Implementing a Data Warehouse Schema

After completing this module, you will be able to:

- Implement a logical design for a data warehouse
- Implement a physical design for a data warehouse

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

After completing this module, you will be able to:

- Create Columnstore indexes
- Work with Columnstore Indexes

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

Lab: Implementing an Azure SQL Data Warehouse

After completing this module, you will be able to:

- Describe the advantages of Azure SQL Data Warehouse
- Implement an Azure SQL Data Warehouse
- Describe the considerations for developing an Azure SQL Data Warehouse
- Plan for migrating to Azure SQL Data Warehouse

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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

After completing this module, you will be able to:

- Describe ETL with SSIS
- Explore Source Data
- Implement a Data Flow

[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

Lab: Implementing Control Flow in an SSIS Package

Lab: Using Transactions and Checkpoints

After completing this module, you will be able to:

- Describe control flow
- Create dynamic packages
- Use containers

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

After completing this module, you will be able to:

- Debug an SSIS package
- Log SSIS package events
- Handle errors in an SSIS package

Module 9: Implementing an Incremental ETL Process

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
- Temporal Tables

Lab: Extracting Modified Data

Lab: Loading Incremental Changes

After completing this module, you will be able to:

- Describe incremental ETL
- Extract modified data
- Describe temporal tables

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

Lab: De-duplicating Data

After completing this module, you will be able to:

- Describe data quality services
- Cleanse data using data quality services
- Match data using data quality services

- De-duplicate data using data quality services

Module 11: Using Master Data Services

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

Lessons

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

Lab: Implementing Master Data Services

After completing this module, you will be able to:

- Describe the key concepts of master data services
- Implement a master data service model
- Manage master data
- Create a master data hub

Module 12: Extending SQL Server Integration Services (SSIS)

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

Lessons

- Using Custom Components in SSIS
- Using Scripting in SSIS

Lab: Using Scripts and Custom Components

After completing this module, you will be able to:

- Use custom components in SSIS
- Use scripting in SSIS

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

After completing this module, you will be able to:

- Describe an SSIS deployment
- Deploy an SSIS package
- Plan SSIS package execution

Module 14: Consuming Data in a Data Warehouse

This module describes how to debug and troubleshoot SSIS packages.

Lessons

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

Lab: Using Business Intelligence Tools

After completing this module, you will be able to:

- Describe at a high level business intelligence
- Show an understanding of reporting
- Show an understanding of data analysis
- Analyze data with Azure SQL data warehouse

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