



# Implementing a SQL Data Warehouse

Exam Ref 70-767

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Important: How to use this book to study for the exam

Chapter 1 Design and implement a data warehouse

Skill 1.1 Design and implement dimension tables

Determine attributes

Design shared and conformed dimensions

Design hierarchies

Determine dimension keys and key relationships for a data warehouse

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Determine star or snowflake schema requirements

Determine auditing or lineage requirements

Implement data lineage of a dimension table

## **Skill 1.2 Design and implement fact tables**

Identify measures

Design and implement fact tables

Implement additive, semi-additive, and non-additive measures

Identify dimension table relationships

## **Skill 1.3 Design and implement indexes for a data warehouse workload**

Design an indexing solution

Implement clustered, nonclustered, filtered, and columnstore indexes

Select appropriate indexes

## **Skill 1.4 Design storage for a data warehouse**

Design an appropriate storage solution, including hardware, disk, and file layout

## **Skill 1.5 Design and implement partitioned tables and views**

Design a partition structure to support a data warehouse

Implement sliding windows

Implement partition elimination

Design a partition structure that supports the quick loading and scale-out of data

Thought experiment

Thought experiment answer

Chapter summary

## **Chapter 2 Extract, transform, and load data**

### **Skill 2.1 Design and implement an extract, transform, and load (ETL) control flow by using a SQL Server Integration Services (SSIS) package**

Understanding new terminologies

Design and implement ETL control flow elements, including containers, tasks,

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and precedence constraints

Create variables and parameters

Create checkpoints, sequence and loop containers, and variables in SSIS

Implement data profiling, parallelism, transactions, logging, and security

## **Skill 2.2 Design and implement an ETL data flow by using an SSIS package**

Implement slowly changing dimension, fuzzy grouping, fuzzy lookup, audit, blocking, non-blocking, and term lookup |transformations

Data flow source and destination column mapping

Determine appropriate scenarios for Transact-SQL joins versus SSIS lookup

## **Skill 2.3 Implement an ETL solution that supports incremental data extraction**

Design fact table patterns

Enable Change Data Capture

Create a SQL MERGE statement

## **Skill 2.4 Implement an ETL solution that supports incremental data loading**

Design a control flow to load change data

Load data by using Transact-SQL Change Data Capture functions

Load data by using Change Data Capture in SSIS

## **Skill 2.5 Debug SSIS packages**

Fix performance, connectivity, execution, and failed logic issues by using the debugger

Add data viewers

Implement breakpoints

Enable logging for package execution

Implement error handling for data types

Profile data with different tools

Error handling at package level

## **Skill 2.6 Deploy and configure SSIS packages and projects**

Create an SSIS catalog

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Deploy packages by using the deployment utility, SQL Server, and file systems

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Thought exercise

Thought exercise answer

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## **Chapter 3 Build data quality solutions**

### **Skill 3.1 Create a knowledge base**

Install DQS

Create a Data Quality Services (DQS) knowledge base

Determine appropriate use cases for a DQS Knowledge Base

Perform domain management

Perform knowledge discovery

### **Skill 3.2 Maintain data quality by using DQS**

Add matching knowledge to a knowledge base

Create a matching policy

Prepare a DQS Knowledge Base for data deduplication

Clean data by using DQS knowledge

Clean data by using the SSIS DQS task

### **Skill 3.3 Implement a Master Data Services (MDS) model**

Install MDS

Use the Master Data Services Configuration Manager

Create a Master Data Services database and web application

Implement MDS

Create models, entities, hierarchies, collections, and attributes

Define security roles

Import and export data

Stage and load data

Create and edit a subscription

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Implement entities, attributes, hierarchies, and business rules

## **Skill 3.4 Manage data by using MDS**

Use MDS tools

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Create a Master Data Management hub

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