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Microsoft **SQL Server™ 7.0** **数据仓库开发技术**

(影印版)

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Microsoft
SQL Server 7.0
Data
Warehousing
Training
Kit

- MCP 70-019 考试 (Microsoft SQL Server 7.0 数据仓库设计与实现) 专用教材
- 提供实际训练, 培养动手能力

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70-019



微软指定 MCDBA 教材(影印版)

Microsoft SQL Server 7.0 Data Warehousing
Training Kit

Microsoft SQL Server 7.0 数据仓库开发技术

北京大学出版社

内 容 简 介

本书是《微软指定 MCDBA 教材（影印版）》丛书中的一本，讲述如何使用 SQL Server 7.0 设计和实现数据仓库解决方案，包括需求分析、体系结构定义、逻辑设计、物理设计、创建数据服务、维护、监控和优化等。本书还指导您准备 MCP 70-019 考试（面向微软认证数据库管理员和微软认证系统工程师）。

本书由微软公司专家编写，技术深入，权威性强，可作为信息系统的数据库仓库专业人员和 MCP 考试应试者的参考书。

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前 言

欢迎使用微软指定 MCDBA 教材（影印版）丛书！

微软认证是一项综合性认证计划，是对个人的与软件有关的技能的重要评测标准，其证书授予那些能够使用微软公司的产品完成特定任务和实施解决方案的人。微软认证被世界的技术管理者视为质量的标志，是雇主聘用和考核职员的重要参考依据，又是个人求职和升迁的金钥匙。

MCDBA 即微软认证数据库管理员，涉及 Microsoft SQL Server 的安装、管理及优化，企业数据库解决方案（设计、配置和开发），以及企业数据仓库解决方案（数据分析与决策支持）等技术。本套影印丛书就是针对 MCDBA 认证计划推出的，共包括 3 册，分别是《Microsoft SQL Server 7.0 系统管理（影印版）》、《Microsoft SQL Server 7.0 数据库实现（影印版）》和《Microsoft SQL Server 7.0 数据仓库开发技术（影印版）》。3 册书分别针对不同的用户群体以及 MCDBA 认证计划的不同考试，讲述 Microsoft SQL Server 7.0 的不同内容，各有侧重，互为补充。

本套丛书具有以下共同特点：

每一章一开始，首先对本章内容作以概括性介绍，让读者有一个总体性认识。然后说明在学习本章内容之前需要具有哪些预备知识，安装哪些软件。

书中提供了大量操作训练实例，让读者能够即时地对所学技能进行有效的练习。

正文当中穿插了许多提示（Tip）、要点（Important）、注意（Note）和警告（Caution）等信息，起到了画龙点睛的作用。

配套光盘中提供了丰富的辅助资料，包括多媒体演示、示例数据和操作训练文件等。多媒体演示所涉及的是本书中的一些关键概念。操作训练文件则给了读者一个亲自动手的机会。可以直接在光盘上练习，也可以安装到硬盘上之后再使用。

为了进一步提高本丛书及其配套光盘的质量，希望广大读者把有关的意见或建议反馈给微软出版社。联系方法是：

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About This Book

Welcome to Microsoft SQL Server 7.0 Data Warehousing Training kit. The book provides you with the technical skills required to implement a data warehouse with Microsoft SQL Server client/server database management system version 7.0 and Microsoft SQL Server OLAP Services. The content of this book provides a theoretical and practical discussion of data warehouse design and the important features that SQL Server provides for implementing a data warehouse.

Note For more information on becoming a Microsoft Certified Systems Engineer, see the section titled “The Microsoft Certified Professional Program” later in this chapter.

Each chapter in this book is divided into lessons. Most lessons include hands-on exercises that allow you to practice or demonstrate a particular concept or skill. Each lesson ends with a short summary and each chapter has a set of review questions to test your knowledge of the chapter material.

The “Getting Started” section of this chapter provides important setup instructions that describe the hardware and software requirements to complete the exercises in this course. It also provides information about the networking configuration necessary to complete some of the hands-on exercises. Read through this section thoroughly before you start the lessons.

Intended Audience

This book was developed for information system (IS) professionals who need to design, plan, implement, and support data warehouses using Microsoft SQL Server 7.0 and Microsoft SQL Server OLAP Services or who plan to take the related Microsoft Certified Professional exam 70-019: Designing and Implementing Data Warehouses with Microsoft SQL Server 7.0.

Prerequisites

Experience using the Microsoft Windows NT Server network operating system:

- Working knowledge of the Windows NT 4.0 interface
- Understand basic Microsoft network functions and terminology

- One year of experience with relational databases:
 - Have supported or designed a relational database
 - Understand the fundamental concepts of relational database design
- Three to six months of SQL Server experience:
 - Installed at least one SQL Server
 - Designed relational databases
 - Worked with SQL Server client tools
- Understand basic ANSI SQL statements and basic Transact-SQL statements
- Understand basic Visual Basic programming.

You should also have passed the Microsoft Certified Professional Exam 70-028 (Administering Microsoft SQL Server 7.0) and the Microsoft Certified Professional Exam 70-029 (Designing and Implementing Databases with Microsoft SQL Server 7.0) or have mastered the Microsoft SQL Server 7.0 System Administration Training Kit and the Microsoft SQL Server 7.0 Database Implementation Training Kit.

Reference Materials

You might find the following reference material useful:

- SQL Server white papers and case studies available online at www.microsoft.com/sql and www.microsoft.com/sql/productinfo/olap.htm
- *Microsoft OLE DB 2.0 Programmer's Reference and Data Access SDK*. Microsoft Press.
- *Hitchhiker's Guide to Visual Basic and SQL Server*. 6th ed. Microsoft Press.
- SQL Server Books Online available on the product CD-ROM.

About The CD-ROMs

The Supplemental Course Materials compact disc contains a variety of informational aids that can be used throughout this book. These include multimedia presentations, sample data, add-on software, and files used in hands-on exercises.

The multimedia presentation supplements some of the concepts covered in the book. You should view this presentation when suggested, and then use it as a review tool while you work through the material. A complete version of this book is also available online with a variety of viewing options available. For information about using the online book, see the section "About the Online Book" later in this introduction. (The other CD-ROM contains an evaluation version of Microsoft SQL 7.0 120-day Evaluation Edition.)

The Supplemental Course Material compact disc also contains files required to perform the hands-on exercises, and information designed to supplement the lesson material. These files can be used directly from the CD-ROM or copied onto

your hard disk by using the Setup program. The files include demonstrations of key concepts, practice files for the exercises, and additional articles about related concepts.

The demonstrations require an HTML browser. If Microsoft Internet Explorer is installed on your system simply double-click on any of these files to view them.

Features of This Book

Each chapter opens with a “Before You Begin” section, which prepares you for completing the chapter.

- Whenever possible, lessons contain exercises that give you an opportunity to use the skills being presented or to explore the part of the application being described. All exercises are identified with a bullet symbol like the one to the left of this paragraph.

The “Review” section at the end of each chapter allows you to test what you have learned in the lesson.

Appendix A, “Questions and Answers” contains all of the book’s review questions and corresponding answers.

Notes

Notes appear throughout the lessons.



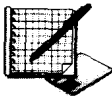

- Notes marked **Tip** contain explanations of possible results or alternative methods.
- Notes marked **Important** contain information that is essential to completing a task.
- Notes marked **Note** contain supplemental information.
- Notes marked **Caution** contain warnings about possible loss of data.

Conventions

- Hands-on practices that you are to follow are presented in numbered lists of steps (1, 2, and so on). A triangular bullet (►) indicates the beginning of a practice.
- The word *select* is used for highlighting folders, file names, text boxes, menu bars, and option buttons, and for selecting options in a dialog box.
- The word *click* is used for carrying out a command from a menu or dialog box.

Notational Conventions

- Characters or commands that you type appear in **bold lowercase** type.
- *Italic* in syntax statements indicates placeholders for variable information. *Italic* is also used for book titles.
- Names of files and folders appear in Title Caps, except when you are to type them directly. Unless otherwise indicated, you can use all lowercase letters when you type a file name in a dialog box or at a command prompt.
- File name extensions appear in uppercase.
- Acronyms appear in all uppercase.
- Monospace type represents code samples, examples of screen text, or entries that you might type at a command prompt or in initialization files.
- Square brackets [] are used in syntax statements to enclose optional items. For example, [filename] in command syntax indicates that you can choose to type a file name with the command. Type only the information within the brackets, not the brackets themselves.
- Braces { } are used in syntax statements to enclose required items. Type only the information within the braces, not the braces themselves.
- Icons represent specific sections in the book as follows:

Icon	Represents
	A multimedia presentation. You will find the applicable multimedia presentation on the course compact disc.
	A file contained on the CD-ROM. Some files are needed to complete a hands-on practice; others contain supplemental information about the topic being discussed. The purpose of the file and its location are described in the accompanying text.
	A hands-on practice. You should perform the practice to give yourself an opportunity to use the skills being presented in the lesson.
	Chapter review questions. These questions at the end of each chapter allow you to test what you have learned in the lessons. You will find the answers to the review questions in Appendix A, "Questions and Answers" at the end of the book.

Keyboard Conventions

- A plus sign (+) between two key names means that you must press those keys at the same time. For example, “Press ALT+TAB” means that you hold down ALT while you press TAB.
- A comma (,) between two or more key names means that you must press each of the keys consecutively, not together. For example, “Press ALT, F, X” means that you press and release each key in sequence. “Press ALT+W, L” means that you first press ALT and W together, and then release them and press L.
- You can choose menu commands with the keyboard. Press the ALT key to activate the menu bar, and then sequentially press the keys that correspond to the highlighted or underlined letter of the menu name and the command name. For some commands, you can also press a key combination listed in the menu.
- You can select or clear check boxes or option buttons in dialog boxes with the keyboard. Press the ALT key, and then press the key that corresponds to the underlined letter of the option name. Or you can press TAB until the option is highlighted, and then press the spacebar to select or clear the check box or option button.
- You can cancel the display of a dialog box by pressing the ESC key.

Chapter and Appendix Overview

This self-paced training course combines notes, hands-on exercises, a multimedia presentation, and review questions to teach you SQL Server 7.0 data warehousing. It is designed to be completed from beginning to end, but you can choose a customized track and complete only the sections that interest you. (See the next section, “Finding the Best Starting Point for You” for more information.) If you choose the customized track option, see the “Before You Begin” section in each chapter. Any hands-on exercises that require preliminary work from preceding chapters refer to the appropriate chapters.

The book is divided into the following chapters:

- The “About This Book” section contains a self-paced training overview and introduces the components of this training. Read this section thoroughly to get the greatest educational value from this self-paced training and to plan which lessons you will complete.
- Chapter 1, “Benefits of Data Warehousing,” discusses many of the key benefits of data warehousing. First, it introduces fundamental data warehousing concepts. Then it examines the benefits realized from implementing data warehouses or data marts. Finally, it introduces the features of SQL Server 7.0 that support data warehousing.

- Chapter 2, “Applications of Data Warehousing,” discusses specific aspects of the data warehousing process, examines the life cycle flow of information from other systems into the data warehouse, and evaluates how data warehousing supports the objective of various sample business scenarios.
- Chapter 3, “Challenges of Data Warehousing,” examines some of the problems and issues to overcome. The chapter describes effective analysis techniques and examines the similarities of and differences between data warehousing projects and other types of development undertakings. The chapter discusses the use of good project management practices and encourages a disciplined approach and preparation for any potential problems and issues in advance, so that organizations with even large data warehousing projects can achieve their objectives.
- Chapter 4, “Developing the Logical Design,” describes the process of deriving a database design that can be implemented as a dimensional schema from the conceptual design you have discovered through the business analysis process. Creating a dimensional schema differs from designing a relational schema, but the two processes share several common design practices that are used to construct a useful dimensional design.
- Chapter 5, “Defining the Technical Architecture for a Solution,” begins the process of making the data warehouse a reality. First, you will examine the framework that supports the implementation of a data warehouse. Then you will examine the specific features within both Microsoft SQL Server and Microsoft SQL Server OLAP Services that support effective data warehouse administration and use. Finally, you will begin implementation by creating a star schema database.
- Chapter 6, “SQL Server Data Services,” begins to address the issue of loading data into your data warehouse from various sources. SQL Server provides extensive support for access to native SQL Server databases and other data. This support is built upon the OLE DB specification. Data Transformation Services in SQL Server 7 provide a powerful, flexible tool for performing many kinds of data transfer and loading and are ideally suited to loading your data warehouse. The chapter introduces data-loading concepts such as data scrubbing and data transformation.
- Chapter 7, “Replication,” explains the concepts and terminology associated with replication and distributed data. Like DTS and other methods for transferring data, replication has many uses. Data warehouses can benefit from using replication to migrate and archive data between data warehouses and data marts. The chapter concludes with some examples of how you might use replication in a data warehouse environment.
- Chapter 8, “Advanced DTS,” explains how to take advantage of the rich functionality provided by DTS. You can create DTS packages that use complex workflows and data transformations using DTS Designer, and you can program DTS using COM automation. You will create a package that loads an OLAP database with data from an OLTP database.

- Chapter 9, “Microsoft SQL Server OLAP Services,” explains how to create and manage OLAP Services cubes. The chapter discusses selecting the storage type, setting up security, and, in some cases, optimizing performance with partitions. The chapter shows how OLAP Services solves these management challenges with architecture and usability tools that simplify complex tasks.
- Chapter 10, “Data Analysis Tools and Architecture,” discusses the basic concepts of data analysis, and describes how to analyze data while disconnected from a network. The chapter introduces and demonstrates data analysis tools that include the OLAP Manager Cube Browser, Microsoft Excel 2000, and Web pages. The chapter shows how OLAP Services provides architecture for software vendors to develop OLAP data analysis tools that work with any OLE DB provider and for you to write your own OLAP client applications.
- Chapter 11, “Using Microsoft English Query to Query Warehouse Data,” explains how you can use Microsoft English Query to build applications that support natural-language queries so that users can interact with the data in a data warehouse in a familiar way, asking questions in the same language that they would use when communicating with a person.
- Chapter 12, “MDX Statements and ADO MD Objects,” focuses on programming online analytical processing (OLAP) Services. The chapter explains how to use Multidimensional Expressions (MDX) and ActiveX Data Objects Multidimensional (ADO MD) to query cubes, retrieve and manipulate multidimensional datasets, and create local cubes for offline data analysis. MDX is the language that you use to query an OLAP Services multidimensional schema through the PivotTable Service, and ADO MD is a set of objects that provide multidimensional capabilities to ADO.
- Chapter 13, “Maintaining a SQL Server Data Warehouse,” describes various activities and methods involved in maintaining the data in and the physical structure of a SQL Server data warehouse. The chapter shows you how to use the Maintenance Plan Wizard to develop a specific maintenance plan; synchronize and update data in the data warehouse and your OLAP cubes; back-up and restore your SQL Server databases and your OLAP Services databases; and migrate your OLAP Services Repository into a SQL Server database.
- Chapter 14, “Managing a SQL Server Data Warehouse,” explains the tasks performed to manage a data warehouse built using SQL Server 7.0 and SQL Server OLAP Services. These tasks include managing slowly changing dimensions, managing server resources, security, and performance. The chapter discusses these issues from a data warehousing perspective and shows you how to supplement your standard SQL Server management practices.
- Appendix A, “Questions and Answers,” lists all of the practice and review questions from the book by chapter number showing the suggested answer.
- Appendix B, “Database Schemas,” gives you graphical schema diagrams of the Northwind, Northwind_Mart and library databases. The diagrams show the tables, columns, and relationships in these databases.

- Appendix C, “Performing Basic Queries,” shows you how to create basic SQL queries. If you are not familiar with the basic use of the SELECT, INSERT, UPDATE, and DELETE statements. This appendix discusses using the SELECT statement to retrieve data from one table, using the WHERE clause to limit the rows that are returned by a query, formatting and sorting data in a result set, inserting a row into a table using the INSERT statement, updating rows in a table using the UPDATE statement, and deleting rows from a table using the DELETE or TRUNCATE TABLE statements.
- Appendix D, “Querying Multiple Tables,” explains how to combine the data from multiple tables into useful result sets using SQL joins.
- Appendix E, “Advanced Query Techniques,” discusses subqueries, which make it possible to use queries inside of other queries to create calculated values and specify advanced selection criteria, and cursors, which are used to perform row-based processing on SQL result sets.
- Appendix F, “Summarizing Data,” discusses one of the important benefits of client/server architecture, which is the ability of database servers to quickly and efficiently produce summaries of large amounts of data and send small result sets to client applications. In the chapter, you will learn how to use the features of SQL Server that allow you to create queries that summarize data.

Finding the Best Starting Point for You

Because this book is self-paced, you can skip some lessons and revisit them later. Note, however, that you must install Microsoft SQL Server 7.0, SQL Server OLAP Services, and some other software before you can perform the exercises in the chapters. (See the “Getting Started” section in this About This Book for instructions on how to install the appropriate software.) The exercises in most of the chapters use the Northwind and the Northwind_Mart SQL Server databases, and the Northwind_DSS OLAP Services database. Batch installation files that create the Northwind_Mart database and the Northwind_DSS database for the later chapters are supplied on the Supplemental Course Material CD-ROM. Use the following table to find the best starting point for you:

If you	Follow this learning path
Are preparing to take the Microsoft Certified Professional exam 70-019, Designing and Implementing Data Warehouses with Microsoft SQL Server 7.0.	Read the “Getting Started” section. Work through the remaining chapters in any order.
Want to review information about specific topics from the exam.	Use the “Where to Find Specific Skills in This Book” section that follows this table.

Where to Find Specific Skills in This Book

The following tables provide a list of the skills measured on certification exam 70-019: Designing and Implementing Data Warehouses with Microsoft SQL Server 7.0. The tables provide the skill, and where in this book you will find the lesson relating to that skill.

Note Exam skills are subject to change without prior notice and at the sole discretion of Microsoft.

Analyzing Business Requirements

Skill Being Measured	Location in Book
Analyze the scope of a project.	Chapter 3, Lesson 1 and Chapter 4, Lessons 2 & 3
■ Identify the major subject areas that will be incorporated into the data warehouse.	
Analyze the extent of a business requirement.	Chapter 2, Lesson 3 and Chapter 3, Lesson 1
Analyze security requirements.	Chapter 3, Lesson 3 and Chapter 14, Lesson 3
Analyze performance and scalability requirements.	Chapter 4, Lesson 5 and Chapter 5, Lesson 3 and Chapter 14, Lesson 4
Analyze maintainability requirements.	Chapter 3, Lesson 3 and Chapter 13
Analyze human factors requirements, such as target audience, localization, accessibility, roaming users, Help, and special needs.	Chapter 3

Defining the Technical Architecture for a Solution

Skill Being Measured	Location in Book
Identify which technologies are appropriate for implementation of a given business solution. Technologies include design tools, data transformation tools, storage tools, presentation access tools, management tools, and scheduling tools.	Chapter 5 to Chapter 12
Choose a data storage architecture.	Chapter 5, Lesson 3 and Chapter 9, Lesson 4

Developing the Logical Design

Skill Being Measured	Location in Book
Identify the sources of data from the operational databases.	Chapter 4, Lessons 1 & 2
Identify the encoding structure and key structure for integrating all data.	Chapter 4, Lessons 2, 3 & 4
Identify the filtering requirements for operational data.	Chapter 3, Lesson 1 and Chapter 6, Lesson 1
Assess whether a data mart schema should be integrated within the enterprise data warehouse schema.	Chapter 1, Lesson 1
Assess the level of detail required for data.	Chapter 4, Lesson 3

Deriving the Physical Design

Skill Being Measured	Location in Book
Assess how a given logical design impacts performance, maintainability, extensibility, scalability, availability, and security.	Chapter 4
Assess whether data should be queried from a relational database or a multidimensional database.	Chapter 4, Lessons 1 & 2
Choose a schema design for a relational database. Design options include normalized, star, or snowflake.	Chapter 4, Lessons 1, 2 & 3
Group data into fact tables and dimension tables by applying denormalization rules.	Chapter 4, Lessons 1, 2, 3, & 4

Creating Data Services

Skill Being Measured	Location in Book
Use Microsoft ActiveX Data Objects (ADO), ActiveX Data Objects Multidimensional (ADO MD), multidimensional expressions (MDX), or Microsoft English Query to access or manipulate a data source.	Chapter 11 and Chapter 12
Write SQL statements that retrieve and summarize data. SQL statements include SELECT, ROLLUP, CUBE, and HAVING.	Appendixes C, D, E, and F
Replicate data among data marts.	Chapter 7

Implementing a Physical Data Warehouse and Implementing OLAP Services

Skill Being Measured	Location in Book
Implement a data storage architecture by creating and managing files and filegroups.	Chapter 5, Lessons 2 & 3
Use visual database tools to create databases and database tables that enforce data integrity and referential integrity.	Chapter 5, Lesson 3
Populate the warehouse with data from an external data source by using Data Transformation Services (DTS). External data sources include other SQL Server databases, comma-separated files, delimited files, and OLE DB for ODBC.	Chapter 6, Lesson 2 and Chapter 8
■ Track data lineage	
■ Store DTS packages in the repository	
Choose an indexing strategy to optimize performance for relational decision support.	Chapter 5, Lesson 3 and Chapter 14, Lesson 4
Create, maintain, and optimize indexes.	Chapter 5, Lesson 3 and Chapter 14, Lesson 4
Design the multi-dimensional OLAP model.	Chapter 9, Lessons 3 & 4 and Chapter 13, Lesson 2 and Chapter 14, Lesson 4
■ Create the dimension hierarchy.	
■ Create measures.	
■ Assign member properties.	
Create and maintain OLAP aggregates.	Chapter 9, Lessons 3 & 4 and Chapter 13, Lesson 2 and Chapter 14, Lesson 4
■ Choose the data storage mechanism, specifically MOLAP, ROLAP, or HOLAP.	
■ Build the aggregations.	
■ Partition data for scalability.	
■ Perform incremental updates of cubes	

Skill Being Measured	Location in Book
<ul style="list-style-type: none"> ■ Merge incremental updates with the main partition ■ Monitor and optimize aggregations based on usage 	
Implement security for databases and cubes	Chapter 9, Lesson 4 and Chapter 14, Lesson 3
Configure SQL Server options for optimal performance	Chapter 14, Lesson 2

Maintaining a Database and VLDB

Skill Being Measured	Location in Book
Monitor and optimize the amount of space in the database.	Chapter 5, Lesson 3 and Chapter 14, Lesson 4
Perform backup procedures, restore procedures, and roll-off procedures on the data warehouse.	Chapter 13, Lesson 3
<ul style="list-style-type: none"> ■ Develop archiving procedures. ■ Develop methods for refreshing data. 	
Perform disaster recovery procedures on the database.	Chapter 13, Lesson 3
Maintain database indexing.	Chapter 13, Lesson 1
Verify database consistency.	Chapter 13, Lesson 1
Monitor and optimize query performance.	Chapter 14, Lesson 4
Automate maintenance tasks by using alerts and agents.	Chapter 6, Lesson 2 and Chapter 13, Lesson 3 and Chapter 7, Lesson 4
<ul style="list-style-type: none"> ■ Schedule DTS events. ■ Schedule backup events. ■ Schedule replication events. 	

Note Some of the skills defined in the previous tables are discussed in greater detail in the Microsoft SQL Server 7.0 System Administration Training Kit and the Microsoft SQL Server 7.0 Database Implementation Training Kit.

Getting Started

This self-paced training course contains hands-on procedures to help you learn about data warehousing with Microsoft SQL Server 7.0 and Microsoft SQL Server OLAP Services.

Caution Several exercises may require you to make changes to your servers. This may have undesirable results if you are connected to a larger network. Check with your Network Administrator before attempting these exercises.

Hardware Requirements

Each computer must have the following minimum configuration. All hardware should be on the Microsoft Windows NT Server 4.0 Hardware Compatibility List.

- Intel or compatible (Pentium 166 MHz or higher, Pentium PRO, or Pentium II) computer.
- At least 64 MB of memory.
- At least 300 MB of free hard drive space.
- Sound card and speakers.
- CD-ROM drive.

Software Requirements

The following software is required to complete the exercises in this course. A 120-day evaluation copy of Microsoft SQL Server 7.0 is included on a CD-ROM in this kit.

Microsoft Windows NT Server 4.0 with Service Pack 4, preferably installed as a Primary Domain Controller.

Microsoft SQL Server 7.0 Standard Edition and Microsoft SQL Server OLAP Services.

Caution The 120-day Evaluation Edition provided with this training is not the full retail product and is provided only for the purposes of training and evaluation. Microsoft Technical Support does not support this evaluation edition. For additional support information regarding this book and the CD-ROMs (including answers to commonly asked questions about installation and use), visit the Microsoft Press Technical Support Web site at <http://mspress.microsoft.com/mspress/support/>. You can also email TKINPUT@MICROSOFT.COM, or send a letter to Microsoft Press, Attn: Microsoft Press Technical Support, One Microsoft Way, Redmond WA 98052-6399.
