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Exam 70-028

Administering SQL Server 7

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Brian Talbert

MCSE
Administering
SQL Server 7

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MICROSOFT EXAM OBJECTIVES
EXAM 70-028: ADMINISTERING MICROSOFT SQL 7.0

Planning	See Chapter(s):
Develop a security strategy.	2, 5, 6, 7
Develop a SQL Server capacity plan.	4, 7, 8, 11
Develop a data availability solution.	9, 10, 11
Develop a migration plan.	13
Develop a replication strategy.	14, 15

Installation And Configuration	See Chapter(s):
Install SQL Server 7.0.	2, 7, 13
Configure SQL Server.	8, 12
Implement full-text searching.	8

Configuring And Managing Security	See Chapter(s):
Assign SQL Server access through Windows NT accounts, SQL Server logins, and built-in administrator logins.	5
Assign database access to Windows NT accounts, SQL Server logins, the guest user account, and the dbo user account.	5
Create and assign SQL Server roles. Server roles include fixed server, fixed database, public, user-defined database, and application.	6
Grant to database users and roles the appropriate permissions on database objects and statements.	6
Audit server and database activity.	5

Managing And Maintaining Data	See Chapter(s):
Create and manage databases.	8
Load data by using various methods. Methods include the **INSERT** statement, the **SELECT INTO** statement, the bcp utility, Data Transformation Services (DTS), and the **BULK INSERT** statement.	13
Back up system databases and user databases by performing a full database backup, a transaction log backup, a differential database backup, and a filegroup backup.	9
Restore system databases and user databases from a full database backup, a transaction log backup, a differential database backup, and a filegroup backup.	10
Manage replication.	15
Automate administrative tasks.	12
Enable access to remote data.	7

Monitoring And Optimizing	See Chapter:
Monitor SQL Server performance.	16
Tune and optimize SQL Server.	16
Limit resources used by queries.	16

Troubleshooting	See Chapter(s):
Diagnose and resolve problems in upgrading from SQL Server 6.x.	13
Diagnose and resolve problems in backup and restore operations.	9, 10
Diagnose and resolve replication problems.	15, 16
Diagnose and resolve job or alert failures.	12
Diagnose and resolve distributed query problems.	7
Diagnose and resolve client connectivity problems.	7
Diagnose and resolve problems in accessing SQL Server, databases, and database objects.	5, 6

This book is dedicated to my loving wife, Caroline, and our two beautiful children, Owen and Rhiannon. Sharing my life with each of you is what makes me a complete and happy man.
—Brian Talbert

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ABOUT THE AUTHOR

Brian Talbert (MCT, MCSE, CNE) is a Systems Architect with Getronics Wang. His involvement with databases began in the late 1980's with dBaseIII and grew intensely as he used his xBase programming skills to develop large, custom designed, multi-user database solutions. He now spends most of his time architecting database solutions for large enterprise customers, and at every opportunity he finds himself in the classroom, where his true passion for teaching is able to emerge.

ACKNOWLEDGMENTS

EXAM INSIGHTS

Welcome to *MCSE Administering SQL 7 Exam Prep*! This book aims to help you get ready to take—and pass—the Microsoft certification Exam 70-028, titled "Administering Microsoft SQL Server 7.0." This Exam Insights section discusses exam preparation resources, the testing situation, Microsoft's certification programs in general, and how this book can help you prepare for Microsoft's certification exams.

Exam Prep books help you understand and appreciate the subjects and materials you need to pass Microsoft certification exams. I've worked from Microsoft's curriculum objectives to ensure that all key topics are clearly explained. Our aim is to bring together as much information as possible about Microsoft certification exams.

Nevertheless, to completely prepare yourself for any Microsoft test, I recommend that you begin your studies with some classroom training or some background reading. You might decide to read The Coriolis Group's *Exam Prep* book that you have in hand first, or you might decide to start with another study approach. You may also want to refer to one of a number of study guides available from Microsoft or third-party vendors.

I also strongly recommend that you install, configure, and fool around with the software that you'll be tested on, because nothing beats hands-on experience and familiarity when it comes to understanding the questions you're likely to encounter on a certification test. Book learning is essential, but hands-on experience is the best teacher of all!

HOW TO PREPARE FOR AN EXAM

Preparing for any SQL Server-related test (including SQL Server Administration) requires that you obtain and study materials designed to provide comprehensive information about the product and its capabilities that will appear on the specific exam for which you are preparing. The following list of materials will help you study and prepare:

➤ The SQL Server product CD includes comprehensive online documentation and related materials; it should be a primary resource when you are preparing for the test.

➤ The exam preparation materials, practice tests, and self-assessment exams on the Microsoft Training And Certification Download page (**www.microsoft.com/train_cert/download/downld.htm**). Find the materials, download them, and use them!

In addition, you'll probably find any or all of the following materials useful in your quest for SQL Server expertise:

➤ Microsoft Training Kits—Microsoft Press offers a training kit that specifically targets Exam 70-028. For more information, visit: **http:// mspress.microsoft.com/books/1500.htm**. This training kit contains information that you will find useful in preparing for the test.

➤ Microsoft TechNet CD—This monthly CD-based publication delivers numerous electronic titles that include coverage of TCP/IP and related topics on the Technical Information (TechNet) CD. Its offerings include product facts, technical notes, tools and utilities, and information on how to access the Seminars Online training materials for TCP/IP. A subscription to TechNet costs $299 per year, but it is well worth the price. Visit **www.microsoft.com/technet/** and check out the information under the "TechNet Subscription" menu entry for more details.

➤ Study Guides—Several publishers—including The Coriolis Group—offer SQL Server titles. The Coriolis Group series includes:

➤ The Exam Cram series—These books give you information about the material you need to know to pass the tests.

➤ The Exam Prep series—These books provide a greater level of detail than the Exam Cram books and are designed to teach you everything you need to know from an exam perspective. MCSE Administering SQL 7 is the perfect learning companion to prepare you for Exam 70-028, "Administering Microsoft SQL Server 7.0."

Together, the two series make a perfect pair.

➤ Multimedia—These Coriolis Group materials are designed to support learners of all types—whether you learn best by listening, reading, or doing:

➤ The Practice Tests Exam Cram series—Provides the most valuable test preparation material: practice exams. Each exam is followed by a complete set of answers, as well as explanations of why the right answers are right and the wrong answers are wrong. Each book comes with a CD that contains one or more interactive practice exams.

➤ The Exam Cram Flash Card series—Offers practice questions on handy cards you can use anywhere. The question and its possible answers appear on the front of the card, and the answer, explanation, and a valuable reference appear on the back of the card. The set also includes a CD with an electronic practice exam to give you the feel of the actual test—and more practice!

➤ *The Exam Cram Audio Review series*—Offers a concise review of key topics covered on the exam, as well as practice questions.

➤ *Classroom Training*—CTECs, online partners, and third-party training companies (like Wave Technologies, Learning Tree, Data-Tech, and others) all offer classroom training on SQL Server. These companies aim to help you prepare to pass the SQL Server Administration test. Although such training runs upwards of $350 per day in class, most of the individuals lucky enough to partake (including your humble author, who has even taught such courses) find them to be quite worthwhile.

By far, this set of required and recommended materials represents a nonpareil collection of sources and resources for SQL Server and related topics. I anticipate that you'll find that this book belongs in this company.

TAKING A CERTIFICATION EXAM

Once you've prepared for your exam, you need to register with a testing center. Each computer-based MCP exam costs $100, and if you don't pass, you may retest for an additional $100 for each additional try. In the United States and Canada, tests are administered by Sylvan Prometric and by Virtual University Enterprises (VUE). Here's how you can contact them:

➤ Sylvan Prometric—You can sign up for a test through the company's Web site at **www.slspro.com**. Or, you can register by phone at 800-755-3926 (within the United States or Canada) or at 410-843-8000 (outside the United States and Canada).

➤ Virtual University Enterprises—You can sign up for a test or get the phone numbers for local testing centers through the Web page at **www.vue.com**. Or you can call 800-837-8734.

To sign up for a test, you must possess a valid credit card, or contact either company for mailing instructions to send them a check (in the U.S.). Only when payment is verified, or a check has cleared, can you actually register for a test.

To schedule an exam, call the number or visit either of the Web pages at least one day in advance. To cancel or reschedule an exam, you must call before 7 P.M.

pacific standard time the day before the scheduled test time (or you may be charged, even if you don't appear to take the test). When you want to schedule a test, have the following information ready:

➤ Your name, organization, and mailing address.

➤ Your Microsoft Test ID. (Inside the United States, this means your Social Security number; citizens of other nations should call ahead to find out what type of identification number is required to register for a test.)

➤ The name and number of the exam you wish to take.

➤ A method of payment. (As we've already mentioned, a credit card is the most convenient method, but alternate means can be arranged in advance, if necessary.)

Once you sign up for a test, you'll be informed as to when and where the test is scheduled. Try to arrive at least 15 minutes early.

THE EXAM SITUATION

When you arrive at the testing center where you scheduled your exam, you'll need to sign in with an exam coordinator. He or she will ask you to show two forms of identification, one of which must be a photo ID. After you've signed in and your time slot arrives, you'll be asked to deposit any books, bags, or other items you brought with you. Then, you'll be escorted into a closed room.

All exams are completely closed book. In fact, you will not be permitted to take anything with you into the testing area, but you will be furnished with a blank sheet of paper and a pen or, in some cases, an erasable plastic sheet and an erasable pen. Before the exam, you should memorize as much of the important material as you can, so you can write that information on the blank sheet as soon as you are seated in front of the computer. You can refer to this piece of paper anytime you like during the test, but you'll have to surrender the sheet when you leave the room.

You will have some time to compose yourself, to record this information, and to take a sample orientation exam before you begin the real thing. I suggest you take the orientation test before taking your first exam, but because they're all more or less identical in layout, behavior, and controls, you probably won't need to do this more than once.

Typically, the room will be furnished with anywhere from one to half a dozen computers, and each workstation will be separated from the others by dividers designed to keep you from seeing what's happening on someone else's computer. Most test rooms feature a wall with a large picture window. This permits the exam coordinator to monitor the room, to prevent exam-takers

from talking to one another, and to observe anything out of the ordinary that might go on. The exam coordinator will have preloaded the appropriate Microsoft certification exam—for this book, that's Exam 70-028—and you'll be permitted to start as soon as you're seated in front of the computer.

All Microsoft certification exams allow a certain maximum amount of time in which to complete your work (this time is indicated on the exam by an on-screen counter/clock, so you can check the time remaining whenever you like). All Microsoft certification exams are computer generated and most use a multiple-choice format. Although this may sound quite simple, the questions are constructed not only to check your mastery of basic facts and figures about SQL Server, but they also require you to evaluate one or more sets of circumstances or requirements. Often, you'll be asked to give more than one answer to a question. Likewise, you might be asked to select the best or most effective solution to a problem from a range of choices, all of which technically are correct. Taking the exam is quite an adventure, and it involves real thinking. This book shows you what to expect and how to deal with the potential problems, puzzles, and predicaments.

When you complete a Microsoft certification exam, the software will tell you whether you've passed or failed. Results are broken into several topic areas. Even if you fail, I suggest you ask for—and keep—the detailed report that the test administrator should print for you. You can use this report to help you prepare for another go-round, if needed.

If you need to retake an exam, you'll have to schedule a new test with Sylvan Prometric or VUE and pay another $100.

Note: *The first time you fail a test, you can retake the test the next day. However, if you fail a second time, you must wait 14 days before retaking that test. The 14-day waiting period remains in effect for all retakes after the first failure.*

In the next section, you'll learn more about how Microsoft test questions look and how they must be answered.

EXAM LAYOUT AND DESIGN

Whichever type of test you take, questions belong to one of four basic types:

➤ Multiple-choice with a single answer

➤ Multiple-choice with one or more answers

➤ Multipart with a single answer

➤ Multipart with one or more answers

Always take the time to read a question at least twice before selecting an answer, and always look for an Exhibit button as you examine each question. Exhibits include graphics information related to a question. An exhibit is usually a screen capture of program output or GUI information that you must examine to analyze the question's contents and formulate an answer. The Exhibit button brings up graphics and charts used to help explain a question, provide additional data, or illustrate page layout or program behavior.

Not every question has only one answer; many questions require multiple answers. Therefore, it's important to read each question carefully, to determine how many answers are necessary or possible, and to look for additional hints or instructions when selecting answers. Such instructions often occur in brackets immediately following the question itself (as they do for all multiple-choice questions in which one or more answers are possible).

The following multiple-choice question requires you to select a single correct answer. Following the question is a brief summary of each potential answer and why it is either right or wrong.

Question 1

You have installed SQL Server to support the needs of a furniture manufacturing operation. You initially installed the server on a machine that was a member of the CHAIR domain. You now need to change the server domain membership to TABLE. After making the modification, SQL Server will not start. What is the most likely reason?

O a. TABLE is a reserved keyword in SQL Server and thus cannot be used.

O b. SQL Server has stored the original domain membership in the registry and will now only start in the original domain.

O c. The MSSQLServer service account is inaccessible.

O d. Another SQL Server with the same name already exists in the TABLE domain.

Answer c is correct. Answer a is incorrect because reserved keywords don't present a problem for domain names. Answer b attempts to catch the reader off-guard by describing a fictitious condition that is very similar to a real condition. SQL Server does store the computer name in the registry and will not restart after the computer name has been changed. However, this question deals with a change in the domain names, so answer b is incorrect. If answer d were correct, an error would be reported by the computer itself but SQL Server would still start (though it wouldn't accept connections.) This leaves only answer c, the correct answer. Answer c is correct because the MSSQLServer service is configured to be started automatically by a specific domain user account. If proper trust relationships are not established between the domain

where the user account resides and the new computer domain, then SQL Server wouldn't be able to access the MSSQLServer service account to verify authenticity.

This sample question format corresponds closely to the Microsoft certification exam format—the only difference on the exam is that questions are not followed by answer keys. To select an answer, you would position the cursor over the radio button next to the answer. Then, click the mouse button to select the answer.

Let's examine a question where one or more answers are possible. This type of question provides checkboxes rather than radio buttons for marking all appropriate selections.

Question 2

Which of the following is a database object? [Check all correct answers]

❑ a. A transaction

❑ b. A trigger

❑ c. An extent

❑ d. A table

Answers b and d are correct. There are many different types of objects that may appear in a SQL Server database, including tables and triggers. Transactions are the commands sent to the server to modify or read data, so a is incorrect. Answer c refers to an extent, which is a physical unit of storage for the databases, so c is incorrect. The only correct answers are b and d.

For this particular question, two answers are required. As far as I can tell (and Microsoft won't comment), such questions are scored as wrong unless all the required selections are chosen. In other words, a partially correct answer does not result in partial credit when the test is scored. For Question 2, you have to check the boxes next to items b and d to obtain credit for a correct answer. Notice that picking the right answers also means knowing why the other answers are wrong!

MICROSOFT'S TESTING FORMATS

Currently, Microsoft uses four different testing formats:

➤ Fixed-length

➤ Adaptive

➤ Short-form

➤ Combination

Some Microsoft exams employ more advanced testing capabilities than might immediately meet the eye. Although the questions that appear are still multiple choice, the logic that drives them is more complex than older Microsoft tests, which use a fixed sequence of questions, called a *fixed-length test*. Other exams employ a sophisticated user interface, which Microsoft calls a *simulation*, to test your knowledge of the software and systems under consideration in a more or less "live" environment that behaves just like the original.

For some exams, Microsoft has turned to a well-known technique, called *adaptive testing*, to establish a test-taker's level of knowledge and product competence. Adaptive exams look the same as fixed-length exams, but they discover the level of difficulty at which an individual test-taker can correctly answer questions. At the same time, Microsoft is in the process of converting some of its fixed-length exams into adaptive exams as well. Test-takers with differing levels of knowledge or ability therefore see different sets of questions; individuals with high levels of knowledge or ability are presented with a smaller set of more difficult questions, whereas individuals with lower levels of knowledge are presented with a larger set of easier question. You can think of the short-form test as a kind of "greatest hits exam" (that is, the most important questions are covered) version of an adaptive exam on the same topic.

A fourth kind of test you might encounter is what we've dubbed the combination exam. Several test-takers have reported that some of the Microsoft exams can appear as combination exams. Such exams begin with a set of 15 to 25 adaptive questions, followed by 10 fixed-length questions. In fact, many test-takers have reported that although some combination tests claim that they will present both adaptive and fixed-length portions, when the test-taker finishes the adaptive portion (usually in exactly 15 questions), the test ends there. Because such users have all attained passing scores, it may be that a high enough passing score on the adaptive portion of a combination test obviates the fixed-length portion, but we're not completely sure about this, and Microsoft won't comment. Most combination exams allow a maximum of 60 minutes for the testing period.

Microsoft tests can come in any one of these forms. Whatever you encounter, you must take the test in whichever form it appears; you can't choose one form over another. If anything, it pays more to prepare thoroughly for an adaptive or combination exam than for a fixed-length or a short-form exam: The penalties for answering incorrectly are built into the test itself on an adaptive exam or the first part of a combination exam, whereas the layout remains the same for a fixed-length or short-form test, no matter how many questions you answer incorrectly.

STRATEGIES FOR DIFFERENT TESTING FORMATS

Before you choose a test-taking strategy, you must know if your test is fixed-length, short-form, adaptive, or combination. When you begin your exam, the software will tell you that the test is adaptive, if in fact the version you're taking is an adaptive test. If your introductory materials fail to mention this, you're probably taking a fixed-length test. If the total number of questions involved is exactly 30, you're taking a short-form test. Combination tests announce themselves by indicating that they will start with a set of adaptive questions, followed by fixed-length questions, but don't actually call themselves "combination tests" or "combination exams"—we've adopted this term purely for descriptive purposes.

Tip: You'll be able to tell for sure if you are taking an adaptive, fixed-length, short-form, or combination test by the first question. If it includes a checkbox that lets you mark the question for later review, you're taking a fixed-length or short-form test. If the total number of questions is 30, it's a short-form test; if more than 30, it's a fixed-length test. Adaptive test questions (and the first set of questions on a combination test) can be visited (and answered) only once, and they include no such checkbox.

The Fixed-Length And Short-Form Exam Strategy

A well-known principle when taking fixed-length or short-form exams is to first read over the entire exam from start to finish while answering only those questions you feel absolutely sure of. On subsequent passes, you can dive into more complex questions more deeply, knowing how many such questions you have left.

Fortunately, the Microsoft exam software for fixed-length and short-form tests makes the multiple-visit approach easy to implement. At the top-left corner of each question is a checkbox that permits you to mark that question for a later visit.

Note: *Marking questions makes review easier, but you can return to any question by clicking the Forward or Back button repeatedly.*

As you read each question, if you answer only those you're sure of and mark for review those that you're not sure of, you can keep working through a decreasing list of questions as you answer the trickier ones in order.