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Study Guide

MCSE

Exam 70-294

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MCSE Windows® Server 2003 Active Directory Infrastructure Study Guide

(Exam 70-294)

MCSE Windows® Server 2003 Active Directory Infrastructure Study Guide (Exam 70-294)

I would like to dedicate this book to my friends and family, all of whom were supportive of the project. Mom and Dad, I've been a wayward son lately. Thank you for putting up with me all this while; I did not make it easy for you.

ABOUT THE AUTHOR

Dennis Suhanovs has been in the IT industry since 1996, specializing in Microsoft operating systems and server products such as Microsoft Exchange and Microsoft SQL Server. He received his first technology certification in 1997 and went on to achieve another seven over the course of several years, passing well over 20 Microsoft, Cisco, and Novell exams. After serving for five years as a Microsoft systems engineer, Dennis resigned to establish a consulting and outsourced development practice. His first Exchange 2000 co-authoring project was published in 2001; since then Dennis has been the co-author of several books and author study guides for companies like Brainbench and Self Test Software. When he is not busy helping his public company clients achieve their technology goals, Dennis is learning new riffs on his Fender Strat. Feel free to visit his web site at www.flexecom.com.

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ACKNOWLEDGMENTS

It is an interesting contrast to recall what you planned on saying in the Acknowledgments section of your book the day you sign the contract, and what actually gets written when the book is about to be published. Many people contributed their time and effort to this project, and so my heartfelt gratitude goes out to: Jawahara Saidullah of Waterside and Tim Green of McGraw-Hill/Osborne for making this project possible; Jessica Wilson, Elizabeth Seymour, Gareth Hancock, Judith Brown, and all the folks at McGraw-Hill/Osborne for their contributions to the process; technical editors Todd Logan and Dave Field for making sure the content is technically accurate—thank you kindly. On my side of things, my partners Alex Zotov and Alex Golovine deserve a lot of praise for their contributions, which proved to be instrumental to the project—you guys rock. This has been an interesting endeavor. To all the folks who contributed to our collective effort: I salute you.

In This Book

This book is organized in such a way as to serve as an in-depth review for the MCSE Windows Server 2003 Active Directory Infrastructure exam (Exam 70-294) for both experienced Windows Server 2003 Active Directory professionals and newcomers to Microsoft networking technologies. Each chapter covers a major aspect of the exam, with an emphasis on the "why" as well as the "how to" of working with and supporting Windows Server 2003 Active Directory as a network administrator or engineer.

On the CD

For more information on the CD-ROM, please see Appendix C.

Exam Readiness Checklist

At the end of the Introduction you will find an Exam Readiness Checklist. This table has been constructed to allow you to cross-reference the official exam objectives with the objectives as they are presented and covered in this book. The checklist also allows you to gauge your level of expertise on each objective at the outset of your studies. This should allow you to check your progress and make sure you spend the time you need on more difficult or unfamiliar sections. References have been provided for the objective exactly as the vendor presents it, the section of the study guide that covers that objective, and a chapter and page reference.

In Every Chapter

We've created a set of chapter components that call your attention to important items, reinforce important points, and provide helpful exam-taking hints. Take a look at what you'll find in every chapter:
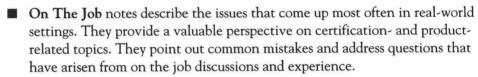
- ■ Every chapter begins with the **Certification Objectives**—what you need to know in order to pass the section on the exam dealing with the chapter topic.

The Objective headings identify the objectives within the chapter, so you'll always know an objective when you see it!

exam Watch

- **Exam Watch** notes call attention to information about, and potential pitfalls in, the exam. These helpful hints are written by authors who have taken the exams and received their certification—who better to tell you what to worry about? They know what you're about to go through!

- **Practice Exercises** are interspersed throughout the chapters. These are step-by-step exercises that allow you to get the hands-on experience you need in order to pass the exams. They help you master skills that are likely to be an area of focus on the exam. Don't just read through the exercises; they are hands-on practice that you should be comfortable completing. Learning by doing is an effective way to increase your competency with a product. The practical exercises will be very helpful for any simulation exercises you may encounter on the MCSE Windows server 2003 Active Directory Infrastructure exam.

on the Job

- **On The Job** notes describe the issues that come up most often in real-world settings. They provide a valuable perspective on certification- and product-related topics. They point out common mistakes and address questions that have arisen from on the job discussions and experience.

- **Inside the Exam** sidebars highlight some of the most common and confusing problems that students encounter when taking a live exam. Designed to anticipate the what the exam will emphasize, getting inside the exam will help ensure you know what you need to know to pass the exam. You can get a leg up on how to respond to those difficult to understand questions by focusing extra attention on these sidebars.

- **Scenario and Solutions** sections lay out potential problems and solutions in a quick-to-read format.

SCENARIO & SOLUTION

James must be available to troubleshoot the computers in any office in the four buildings of the company that he works for…	Implement a roaming profile for James so that he can access his desktop no matter what computer he is using. This is especially handy. since his roaming profile can include the mapping to a network drive that holds his diagnostic tools.

- The **Certification Summary** is a succinct review of the chapter and a restatement of salient points regarding the exam.

✓
- The **Two-Minute Drill** at the end of every chapter is a checklist of the main points of the chapter. It can be used for last-minute review.

Q&A
- The **Self Test** offers questions similar to those found on the certification exams. The answers to these questions, as well as explanations of the answers, can be found at the end of each chapter. By taking the Self Test after completing each chapter, you'll reinforce what you've learned from that chapter while becoming familiar with the structure of the exam questions.

- The **Lab Question** at the end of the Self Test section offers a unique and challenging question format that requires the reader to understand multiple chapter concepts to answer correctly. These questions are more complex and more comprehensive than the other questions, as they test your ability to take all the knowledge you have gained from reading the chapter and apply it to complicated, real-world situations. These questions are aimed to be more difficult than what you will find on the exam. If you can answer these questions, you have proven that you know the subject!

Some Pointers

Once you've finished reading this book, set aside some time to do a thorough review. You might want to return to the book several times and make use of all the methods it offers for reviewing the material:

1. *Re-read all the Two-Minute Drills*, or have someone quiz you. You also can use the drills as a way to do a quick cram before the exam. You might want to make some flash cards out of 3 x 5 index cards that have the Two-Minute Drill material on them.

2. *Re-read all the Exam Watch notes*. Remember that these notes are written by authors who have taken the exam and passed. They know what you should expect—and what you should be on the lookout for.

3. *Review all the S&S sections* for quick problem solving.

4. *Re-take the Self Tests*. Taking the tests right after you've read the chapter is a good idea, because the questions help reinforce what you've just learned. However, it's an even better idea to go back later and do all the questions in the book in one sitting. Pretend that you're taking the live exam. (When you

go through the questions the first time, you should mark your answers on a separate piece of paper. That way, you can run through the questions as many times as you need to until you feel comfortable with the material.)

5. *Complete the Exercises.* Did you do the exercises when you read through each chapter? If not, do them! These exercises are designed to cover exam topics, and there's no better way to get to know this material than by practicing. Be sure you understand why you are performing each step in each exercise. If there is something you are not clear on, re-read that section in the chapter.

INTRODUCTION

This book is written with Exam 70-294 in mind. This being said, the book is not solely an exam guide; if you master the topics we present herein, chances are you are going to do well not just on the exam but also in the corporate world.

Microsoft is positioning Exam 70-294 towards field engineers and system architects. This exam will test your planning and concept skills and it will jog your memory of how and where to use Active Directory tools, how to configure certain settings or policies, and so forth. This is a bit different from Windows 2000 series exams, where two sets of exams were administered: planning (to test your conceptual knowledge) and administration (to test your hands-on experience). Exam 70-294 is a mixture of both.

To address this shift in exam strategy, we put together this book so that it first explains the concepts involved in architecting an Active Directory environment, and then provides you with a few exercises and step-by-step walkthroughs of how to perform certain procedures in this latest revision of the OS. Although there have not been a lot of fundamental changes as far as Active Directory is concerned, rest assured, being aware of the small changes will make a big difference when you take the exam.

In addition to the concepts and step-by-step elements of each chapter, we included "On the Job" and "Exam Watch" tips to draw your attention to points of information we feel are important to remember. To paint an even clearer picture for you, the book features dozens of screenshots and figures. In the middle and at the end of each chapter, a short question and answer section will help you refresh important points and make sure we are still on the same page.

At the end of each chapter you will find a quiz and a lab question. The quizzes are designed to test your conceptual knowledge while the lab questions present on-the-job scenarios in an attempt to test your hands-on knowledge. Don't be alarmed: The exam does not contain any of those 10-page scenarios Microsoft was running in Windows 2000 design exams, but there will be plenty of lab-like questions. Try to answer our questions before you look up the answers—and feel free to disagree with our reasoning, but make sure to go back and review if you feel confused.

Included with the book is a CD-ROM disc that contains a sample exam and the exercise videos in AVI format. The exam mimics the actual Windows Server 2003 Active Directory exam in that it contains approximately the same number of questions that follow a similar format. This will give you a rough idea of what to expect on the actual exam and help you evaluate how well you are prepared for it. Make sure you thoroughly understand concepts such as group policy and Active Directory sites before attempting to take this test, and do not register for your live exam until you are comfortable answering the questions on the CD-ROM.

Exam Readiness Checklist

Official Objective	Certification Objective	Ch #	Pg #	Beginner	Intermediate	Expert
Planning and Implementing the Active Directory Infrastructure						
Plan a strategy for placing global catalog servers.	3.01	3	124			
Evaluate network traffic considerations when placing global catalog servers.	3.01	3	131			
Evaluate the need to enable universal group caching.	3.01	3	133			
Plan flexible operations master role placement.	3.02	3	135			
Plan for business continuity of operations master roles.	3.02	3	136			
Identify operations master role dependencies.	3.02	3	145			
Implement an Active Directory directory service forest and domain structure.	3.03	3	147			
Create a child domain.	3.03	3	150			
Create the forest root domain.	3.03	3	152			
Create and configure Application Data Partitions.	3.03	3	154			
Install and configure an Active Directory domain controller.	3.03	3	157			
Set an Active Directory forest and domain functional level based on requirements.	3.03	3	162			

Exam Readiness Checklist

Official Objective	Certification Objective	Ch #	Pg #	Beginner	Intermediate	Expert
Establish trust relationships (external trusts, shortcut trusts, and cross-forest trusts.)	3.03	3	165			
Implement an Active Directory site topology.	3.04	3	171			
Configure site links.	3.04	3	175			
Configure preferred bridgehead servers.	3.04	3	176			
Plan an administrative delegation strategy.	3.05	3	178			
Plan an organizational unit (OU) structure based on delegation requirements.	3.05	3	180			
Plan a security group hierarchy based on delegation requirements.	3.05	3	182			
Managing and Maintaining an Active Directory Infrastructure						
Manage an Active Directory forest and domain structure.	4.01	4	202			
Manage schema modifications.	4.01	4	203			
Manage trust relationships.	4.01	4	212			
Add or remove a UPN suffix.	4.01	4	220			
Manage an Active Directory site.	4.02	4	224			
Configure site boundaries.	4.02	4	225			
Configure replication schedules.	4.02	4	228			
Configure site link costs.	4.02	4	235			
Monitor Active Directory replication failures. Tools might include Replication Monitor, Event Viewer, and support tools.	4.03	4	239			
Monitor Active Directory replication.	4.03	4	240			
Monitor File Replication service (FRS) replication.	4.03	4	243			
Restore Active Directory directory services.	4.04	4	251			

Exam Readiness Checklist

Official Objective	Certification Objective	Ch #	Pg #	Beginner	Intermediate	Expert
Perform a nonauthoritative restore operation.	4.04	4	254			
Perform an authoritative restore operation.	4.04	4	255			
Troubleshoot Active Directory.	4.05	4	259			
Diagnose and resolve issues related to operations master role failure.	4.05	4	259			
Diagnose and resolve issues related to Active Directory replication.	4.05	4	263			
Diagnose and resolve issues related to the Active Directory database.	4.05	4	264			
Planning and Implementing User, Computer, and Group Strategies						
Plan a security group strategy.	5.01	5	286			
Plan a user authentication strategy.	5.02	5	324			
Plan a smart card authentication strategy.	5.02	5	331			
Create a password policy for domain users.	5.02	5	334			
Plan an OU structure.	5.03	5	337			
Analyze the administrative requirements for an OU.	5.03	5	338			
Analyze the Group Policy requirements for an OU structure.	5.03	5	340			
Implement an OU structure.	5.04	5	341			
Create an OU.	5.04	5	342			
Delegate permissions for an OU to a user or to a security group.	5.04	5	344			
Move objects within an OU hierarchy.	5.04	5	347			
Planning and Implementing Group Policy						
Plan Group Policy strategy.	6.01	6	381			

Exam Readiness Checklist

Official Objective	Certification Objective	Ch #	Pg #	Beginner	Intermediate	Expert
Plan a Group Policy strategy by using Resultant Set of Policy (RSoP) Planning mode.	6.01	6	400			
Plan a strategy for configuring the user environment by using Group Policy.	6.01	6	406			
Plan a strategy for configuring the computer environment by using Group Policy.	6.01	6	411			
Configure the user environment by using Group Policy.	6.02	6	414			
Distribute software by using Group Policy.	6.02	6	415			
Automatically enroll user certificates by using Group Policy.	6.02	6	423			
Redirect folders by using Group Policy.	6.02	6	431			
Configure user security settings by using Group Policy.	6.02	6	435			
Deploy a computer environment by using Group Policy.	6.03	6	442			
Distribute software by using Group Policy.	6.03	6	442			
Automatically enroll computer certificates by using Group Policy.	6.03	6	443			
Configure computer security settings by using Group Policy.	6.03	6	444			
Managing and Maintaining Group Policy						
Troubleshoot issues related to Group Policy application and deployment. Tools might include RSoP and the gpresult command.	7.01	7	464			
Troubleshoot the application of Group Policy security settings. Tools might include RSoP and the gpresult command.	7.01	7	466			
Configure automatic updates for network clients by using Group Policy.	7.02	7	483			

CONTENTS AT A GLANCE

CONTENTS