

MCSE 考试指南系列

MCSE:

NT Server 4

考试指南 (英文原版)



*MCSE Test Success:
NT Server 4*

微软认证的系
统工程师系列
丛书之八

[美] Lisa Donald 著



电子工业出版社

Publishing House of Electronics Industry

URL: <http://www.phei.com.cn>

**MCSE Test Success:
NT Server 4**

MCSE

考试指南系列

微软认证的系统工程师
系列丛书之八

MCSE: NT Server 4

考试指南 (英文原版)

〔美〕 Lisa Donald 著

電子工業出版社

Publishing House of Electronics Industry

版权声明



Copyright©1998 SYBEX Inc., 1151 Marina Village Parkway, Alameda, CA 94501.
World rights reserved. No part of this publication may be stored in a retrieval system, transmitted, or reproduced in any way, including but not limited to photocopy, photograph, magnetic or other record, without the prior agreement and written permission of the publisher.

本书英文版由美国SYBEX公司出版, SYBEX公司已将中文版独家版权授予中国电子工业出版社及北京美迪亚电子信息有限公司。未经许可, 不得以任何形式和手段复制或抄袭本书内容。

书 名: MCSE: NT Server 4考试指南(英文原版)

著 者: [美] Lisa Donald

印 刷 者: 北京天竺颖华印刷厂

装 订 者: 三河金马印装有限公司

出版发行: 电子工业出版社出版、发行

北京市海淀区万寿路173信箱 邮编: 100036 发行部电话: 68279077

北京市海淀区万寿路甲15号南小楼一层 邮编: 100036 发行部电话: 68215345

URL: <http://www.phei.com.cn>

经 销: 各地新华书店经销

开 本: 787×1092 1/16 印张: 15.625 字数: 400千字

版 次: 1998年5月第1版 1998年5月第1次印刷

书 号: ISBN 7-5053-4640-7/TP·2214

定 价: 26.00元

著作权合同登记号 图字: 01-98-0854

凡购买电子工业出版社的图书, 如有缺页、倒页、脱页者, 本社发行部负责调换
版权所有·翻版必究

MCSE系列丛书说明

MCSE考试

MCSE是Microsoft Certified Systems Engineer（微软认证的系统工程师）的缩写形式。MCSE证书意味着持有者具有较高层次的Windows NT、微软操作系统和相关产品的知识。获得MCSE证书需要有良好的计算机基础知识，还需要对操作系统、网络系统和信息化产品有深刻全面的了解，需要经过认真甚至是艰苦的学习和实践过程。由于该证书取之不易，一旦获得便足以说明证书持有者的技术水平，所以该证书得到了普遍的认可，几乎成为许多国外大公司录用人员、提升职务，甚至是提高薪金的依据，所以MCSE考生人数逐年上升。

要获得MCSE证书，需要通过4项必考科目和两项自选科目考试。具体情况如下：

表0.1 MCSE考试内容与可选科目

必考科目	考试内容	可选择科目
#1	网络操作系统	Windows NT Server 3.51或Windows NT 4.0
#2	企业网系统应用	Windows NT Server (3.51或4.0) in the Enterprise
#3	网络基础知识	Networking Essentials
#4	微软操作系统知识	Windows 3.1、Windows 3.11 for Workgroups Windows 95、Windows NT Workstation
自选科目	考试内容	可选择科目
#5	微软信息服务器产品	SQL Server、SNA Server、Exchange Server或 Internet Information Server等十余个科目
#6	微软公司有关TCP/IP 方面的产品	TCP/IP

注释：表中号码#1、#2等仅为叙述方便，与微软考试科目编号无关

为配合国内读者学习掌握计算机基础知识、操作系统、网络系统及信息化产品，我们推出了两套MCSE考试系列丛书，即：

- MCSE学习指南系列（中文译本），目前推出7种
- MCSE考试指南系列（英文原版），目前推出5种

MCSE学习指南系列

由于MCSE考试的技术水平高，要求考生概念清晰、基础知识牢固、能灵活地运用所学知识，并具有丰富的实践经验。显而易见，MCSE的学习、考试用书也应具备上述特点，介绍MCSE的书籍不但适用于MCSE考生，同时也适用于希望学习、掌握相关知识的普通技术人员。为此我们翻译了本系列丛书，并首先推出其中的7本，具体如下：

表0.2 MCSE系列丛书（学习指南系列）

中文书名	丛书编号	适用的考试科目
MCSE: Windows NT Server 4学习指南	MCSE系列丛书之一	表0.1 #1
MCSE: NT Server 4 in the Enterprise学习指南	MCSE系列丛书之二	表0.1 #2
MCSE: 网络基础学习指南	MCSE系列丛书之三	表0.1 #3
MCSE: Windows NT Workstation学习指南	MCSE系列丛书之四	表0.1 #4
MCSE: Windows 95学习指南	MCSE系列丛书之五	表0.1 #4
MCSE: TCP/IP学习指南	MCSE系列丛书之六	表0.1 #6
MCSE: Microsoft Internet Information Server学习指南	MCSE系列丛书之七	表0.1 #5

MCSE考试指南系列

如果说“学习指南”系列（MCSE系列丛书之一至之七）的特点是，十分注重原理介绍、概念阐述和外沿知识的说明，那么，新的考试指南系列则注意了必须了解的知识、结论，强调了正确的操作方法和实际处理问题的能力，同时介绍了许多MCSE考试的经验和技巧，并附有考试例题。

考虑到考试指南系列书注重结论、致力于支持读者通过MCSE考试等特点，加之MCSE考生英语水平普遍很高（考试本身需用英语完成），我们本次以英文“重印”形式推出了五本“考试指南”系列书，详见表0.3所示。

表0.3 MCSE系列丛书（考试指南系列）

中文书名	丛书编号	适用的考试科目
MCSE: NT Server 4考试指南	MCSE系列丛书之八	表0.1 #1
MCSE: NT Server 4 in the Enterprise考试指南	MCSE系列丛书之九	表0.1 #2
MCSE: Networking Essentials考试指南	MCSE系列丛书之十	表0.1 #3
MCSE: NT Workstation 4考试指南	MCSE系列丛书之十一	表0.1 #4
MCSE: TCP/IP for NT Server 4考试指南	MCSE系列丛书之十二	表0.1 #6

由于采用“重印”方式，即从SYBEX公司购买版权，同时获取该书的文本文件和图形文件，在国内重新排版印刷，这样做的优势在于：

- 降低了图书价格，重印书比原版图书便宜许多。
- 缩短了制作周期，重印书与原版书的“出版时差”不足两个月。
- 提高了制作质量，使用原文件排版，印刷质量明显优于各种影印外文原版书。

综上诸多优势，不难想象，该系列书会再次得到广大读者的欢迎。

最后，向支持和喜爱我们图书的广大读者表示感谢，并肯请读者对书中存在的问题提出批评和指正。

***For all of the want-to-be MCSEs.
Especially Brad.
Go take your tests!***

Acknowledgments

This Test Success Guide has been a great book to work on. I want to start by thanking Bonnie Bills of Sybex for involving me in this project. Between the Sybex Study Guides and the Test Success books, I am feeling very intimate with the MCSE exams. It's great to have a chance to share this information through these projects. Bonnie was great to work with and allowed me to do the job to the best of my ability.

I also want to thank my editor, Alison Moncrieff, who always does a great job in addition to being a wonderful person to work with. Ron Reimann worked on this book as the technical editor. Thanks to Ron for his hard work and technical savvy.

The Sybex production team—Production Coordinator Theresa Gonzalez, Electronic Publishing Specialist Bill Gibson, Graphic Illustrator Andrew Benzie, and Indexer Ted Laux—also did a great job. Thanks to everyone for their hard work.

Finally, thanks to my family and friends for being so understanding, even as I was stressing out again over deadlines.

Introduction

One of the greatest challenges facing corporate America is finding people who are qualified to manage corporate computer networks. One of the most common operating systems is Windows NT. As you already know, Windows NT is not a trivial operating system and requires skill and knowledge to manage. To show that a certain level of knowledge has been attained, Microsoft has a certification program that shows employers that someone who has Microsoft certification is capable of managing complex NT networks. The most highly coveted certification is MCSE or Microsoft Certified Systems Engineer.

Why become an MCSE? The main benefit is that you will have much greater earning potential and it carries high industry recognition. Certification can be your key to a new job, or a higher salary—or both.

So what's stopping you? If it's because you don't know what to expect from the tests or are worried that you might not pass, then this book is for you.

Your Key to Passing Exam 70-067

This book provides you with the key to passing Exam 70-067, Implementing and Supporting Windows NT Server 4.0. Inside, you'll find all the information relevant to this exam, including information on some of the "picky" questions on less frequently used options, and hundreds of practice questions.

Understand the Exam Objectives

This book is structured according to the MCSE NT Server exam objectives. At-a-glance review sections and 370 review questions bolster your knowledge of the information relevant to each objective and the exam itself. You learn exactly what you need to know without wasting time on tangents that are not covered by the exam. This book prepares you for the *exam* in the shortest amount of time possible, although to be ready for the real world you need to study the subject in greater depth and get a lot of hands-on practice.

Get Ready for the Real Thing

More than 125 sample test questions prepare you for the test-taking experience. These are multiple-choice questions that resemble actual exam questions—some are even more difficult than what you'll find on the exam. If you can pass the Sample Tests at the end of each unit and the Final Exam at the end of the book, you'll know you're ready.

Is This Book for You?

This book is intended for those who already have some experience with NT Server. It is especially well-suited for:

- Students using courseware or taking a course to prepare for the exam, and who need to supplement their study material with test-based practice questions.
- Network engineers who have worked with the product, but still need to fill in some holes.
- Anyone who has studied for the exams—using self-study guides, computer-based training, classes, or on the job—and wants to make sure that they're adequately prepared.

Understanding Microsoft Certification

Microsoft offers several levels of certification for anyone who has or is pursuing a career as a network professional working with Microsoft products:

- Microsoft Certified Professional (MCP)
- Microsoft Certified Systems Engineer (MCSE)
- Microsoft Certified Professional + Internet
- Microsoft Certified Systems Engineer + Internet
- Microsoft Certified Trainer (MCT)

The one you choose depends on your area of expertise and your career goals.

Microsoft Certified Professional (MCP)

- This certification is for individuals with expertise in one specific area. MCP certification is often a stepping stone to MCSE certification and allows you some benefits of Microsoft certification after just one exam.

By passing one core exam (meaning an operating system exam), you become an MCP.

Microsoft Certified Systems Engineer (MCSE)

This is the certification for network professionals. By becoming an MCSE you differentiate yourself from an MCP. This certification is similar to a college degree in that it shows that you can make a commitment to complete all of the steps required for certification and that you meet high standards in being able to successfully complete all of the required exams.

To become an MCSE, you must pass a series of six exams:

1. Networking Essentials (waived for Novell CNEs)
 2. Implementing and Supporting Microsoft Windows NT Workstation 4.0 (or Windows 95)
 3. Implementing and Supporting Microsoft Windows NT Server 4.0
-

4. Implementing and Supporting Microsoft Windows NT Server 4.0 in the Enterprise
5. Elective
6. Elective



The following list applies to the NT 4.0 track. Microsoft still supports a track for 3.51, but 4.0 certification is more desirable because it is the current operating system.

Some of the electives include:

- Internetworking with Microsoft TCP/IP on Microsoft Windows NT 4.0
- Implementing and Supporting Microsoft Internet Information Server 4.0
- Implementing and Supporting Microsoft Exchange Server 5.5
- Implementing and Supporting Microsoft SNA Server 4.0
- Implementing and Supporting Microsoft Systems Management Server 1.2
- Implementing a Database Design on Microsoft SQL Server 6.5
- System Administration for Microsoft SQL Server 6.5

Microsoft Certified Trainer (MCT)

As an MCT, you can deliver Microsoft certified courseware through official Microsoft channels.

The MCT certification is more costly, because in addition to passing the exams, it requires that you sit through the official Microsoft courses. You also have to submit an application that must be approved by Microsoft. The number of exams you must pass depends on the number of courses you want to teach.



For the most up-to-date certification information, visit Microsoft's Web site at www.microsoft.com/train_cert.

Understanding Microsoft's Exam Objectives

In order to help you prepare for certification exams, Microsoft specifies a list of exam objectives for each test. These objectives are used to help you prepare for the exam. This book is based on the objectives.

For this exam the objectives were designed to measure your ability to design, administer, and troubleshoot NT Server 4.0 when it is part of an enterprise network. In this case an enterprise network is a network that spans a wide area network and consists of multiple domains.

Scheduling and Taking an Exam

Once you think you are ready to take an exam, call Prometric Testing Centers at (800) 755-EXAM (755-3926). They'll tell you where to find the closest testing

center. Before you call, get out your credit card because each exam costs \$100. (If you've used this book to prepare yourself thoroughly, chances are you'll only have to shell out that \$100 once!)

You can schedule the exams for your convenience. The exams are downloaded from Prometric to the testing center, and you show up at your scheduled time and take the exam on a computer. Once you complete the exam, you will know right away whether you have passed or not. If you pass the exam, you don't need to do anything else—Prometric uploads the test results to Microsoft. If you don't pass, it's another \$100 to schedule the exam again.

At the end of the exam, you will receive a score report. It will list the six areas that you were tested on and how you performed. Each unit in this book corresponds to one of the six main objectives. If you do not pass the exam, you will know from the score report where you did poorly, so you can study that particular unit in the Test Success book more carefully.

Test-Taking Hints

Get there early and be prepared This is your last chance to review. Bring your Test Success Book and review any areas you feel unsure of. Also be prepared to show two forms of ID. If you need a quick drink of water or a visit to the restroom, take the time before the exam. Once your exam starts, it will not be paused for these needs.

What you can and can't take in with you These are closed-book exams. The only thing that you can take in is scratch paper provided by the testing center. Use this paper as much as possible to diagram the questions. Many times diagramming questions will help make the answer clear. You will have to give this paper back to the test administrator at the end of the exam.

Many testing centers are very strict about what you can take into the testing room. Some testing centers have gone so far as to require that I can't even take in a zipped-up purse. If you feel tempted to take in any outside material, beware that many testing centers use monitoring devices such as video and audio equipment (so don't swear, even if you are alone in the room!).

Prometric Testing Centers take the test-taking process and the test validation very seriously.

What to expect When you arrive for your exam, you will be asked to present your ID. You will also be asked to sign a piece of paper that specifies that you understand the testing rules. An example is that you will not cheat on the exam.

Before you start the exam you will have an opportunity to take a practice exam. It is not related to NT and is used so that you will have a feel for the exam process.

Then you will take the exam. When you are done with the exam, you will receive your score report. You will also have an opportunity to evaluate the exam and the testing center.

Test approach This really depends on the type of test taker you are. I'm of the school that believes you either know the answer or you don't. If you know the answer, answer the question and move on. If you are not sure of the answer, mark your best guess, then "mark" the question. At the end of the exam, you can view all of your answers or only the questions you have marked. Depending on the amount of time remaining, you can then view all of the questions again, or you view only the questions you were unsure of. I always like to double check all of my answers, because sometimes I misread the question on the first pass. I also find that a related question might provide the answer for a question that I may have been unsure of.

Be sure to answer all questions. Unanswered questions are scored as incorrect and will count against you. Make sure that you keep an eye on the remaining time so that you can pace yourself accordingly.

One piece of advice: If you have narrowed down the answers to two options, always go with your gut reaction, it is usually correct.

If you do not pass the exam, note everything that you can remember while the exam is still fresh on your mind. This will help you prepare for your next exam. Many times the questions overlap, and you don't want to miss the same questions again.

After You Become Certified

Once you become an MCSE, Microsoft kicks in some goodies, including:

- A one-year subscription to Microsoft Technet, a valuable CD collection that contains Microsoft support information
- A one-year subscription to the Microsoft Beta Evaluation program, which is a great way to get your hands on new software. Be the first kid on the block to play with new and upcoming software.
- Access to a secured area of the Microsoft Web site that provides technical support and product information. This certification benefit is also available for MCP certification.
- Permission to use the Microsoft Certified Professional logos (each certification has its own logo), which look great on letterhead and business cards
- An MCP certificate (you will get a certificate for each level of certification you reach), suitable for framing, or sending copies to Mom
- A one-year subscription to Microsoft Certified Professional Magazine, which provides information on professional and career development

Preparing for the MCSE Exams

To prepare for the MCSE certification exams, you should try to work with the product as much as possible. In addition, there are a variety of resources from which you can learn about the products and exams.

Courses

Instructor-Led Be very careful when choosing instructor-led courses. The Microsoft training materials do not always have a high correlation with the exam objectives. If your primary goal is to pass the certification exams, this book is an excellent resource because it will fill in holes left by the Microsoft courseware.

Online Online training is an alternative to instructor-led training. This is a useful option for people who are limited geographically from attending instructor-led training.

Self-Study Guides

If you prefer to use a book to help you prepare for the MCSE tests, you'll find a wide variety available, from complete study guides (such as the Network Press MCSE Study Guide series, which cover the core MCSE exams and key electives) through test-preparation books similar to this one.



For more MCSE information, go to the Sybex Web site. There, you'll find information about the MCP program, useful links, and descriptions of the other quality books in Sybex's MCSE line. Point your browser to <http://www.sybex.com>, and from the home page click on the MCSE logo.

How to Use This Book

This book is designed to help you prepare for the MCSE exam. It reviews each objective and relevant test-taking information, then you have a chance to test your knowledge through Study Questions and a Sample Test.

For each unit:

1. Review the exam objectives list at the beginning of the unit. (You may want to check the Microsoft Train_Cert Web site to make sure the objectives haven't changed.) There are six main objectives. They include:
 - A. Planning
 - B. Installation and Configuration
 - C. Managing Resources
 - D. Connectivity
 - E. Monitoring and Optimization
 - F. Troubleshooting

2. Depending on your level of expertise, read through or scan the reference material that follows the objectives list. Broken down according to the objectives, this section helps you brush up on the information you need to know for the exam.
3. Review your knowledge in the Study Questions section. These are straightforward questions designed to test your knowledge of the specified topic. Answers to Study Questions are listed in the Appendix at the back of the book.
4. Once you feel sure of your knowledge of the area, take the Sample Test. The Sample Test is formatted in content and style to match the real exam. Instead of asking the "cut and dried" questions, you are presented with more scenario-based questions. This will help prepare you for the real exam. Sometimes, half of the battle is in trying to figure out exactly what the question is asking you. Set yourself a time limit based on the number of questions: A general rule is that you should be able to answer 20 questions in 30 minutes. When you've finished, check your answers with the Appendix in the back of the book. If you answer at least 85% of the questions correctly within the time limit (the first time you take the Sample Test), you're in good shape. To really prepare, you should note the questions you miss and be able to score 95-100% correctly on subsequent tries.
5. After you successfully complete Units 1-6, you're ready for the Final Exam in Unit 7. Allow yourself 90 minutes to complete the test of 55 questions. If you answer 85% of the questions correctly on the first try, you're well prepared. If not, go back and review your knowledge of the areas you struggled with, and take the test again.
6. Right before you take the test, scan the reference material at the beginning of each unit to refresh your memory.

At this point, you are well on your way to becoming certified!

Good Luck!

Table of Contents

<i>Introduction</i>	<i>i</i>
Unit 1 Planning	1
Planning Disk Drive Configurations	3
Choosing the Correct File System	3
Choosing the Correct Tolerance Option	3
Choosing Protocols	6
 Unit 2 Installation and Configuration	 15
Installing an Intel-Based Server	18
NT Server Roles	18
Primary Domain Controller	19
Backup Domain Controller	19
Member Server	19
Installation Methods for NT Server	20
Express versus Custom Installation	20
Configuring Protocols and Protocol Bindings	21
TCP/IP	21
NetBEUI	23
Binding Protocols	23
Configuring Network Adapters	23
Changing IRQ, Base I/O, and Memory Addresses	24
Configuring Multiple Adapters	24
Configuring NT Server Core Services	25
Directory Replicator	25
License Manager	26
Other Services	26
Configuring Peripherals and Devices	27
Communication Devices	27
SCSI Devices	27
Tape Device Drivers	28
UPS Devices and UPS Service	28
Mouse Drivers, Display Drivers, and Keyboard Drivers	28
Configuring Hard Disks	28
Allocating Disk Space Capacity	28
Providing Redundancy	28
Improving Performance	30
Providing Security	30
Formatting	30

Configuring Printers	31
Adding and Configuring a Printer	31
Implementing a Printer Pool	32
Setting print Priorities	33
Configuring NT Server for Various Clients	34
Windows NT Workstation	34
Microsoft Windows 95	34
Microsoft MS-DOS Based	35
 Unit 3 Managing Resources	53
User and Group Management	55
Managing NT Users	55
Managing NT User Rights	58
Managing NT Groups	58
Administering Account Policies	60
Auditing Accounts Management	60
Profiles and System Policies	62
Local User Profiles	62
Roaming User Profiles	62
Mandatory User Profiles	63
System Policies	63
Remote Administration	63
Windows 95	63
NT Workstation	63
Main Remote Administration Utilities	64
Disk Resource Management	64
Copying and Moving Files	64
Creating and Sharing Resources	65
Permissions and Security	67
File Auditing	68
 Unit 4 Connectivity	81
NetWare Connectivity	83
Gateway Services for NetWare	84
Migration Tool for NetWare	87
Remote Access Server	92
RAS Communications	92
RAS Protocols	93
RAS Security	95
RAS Dial-Up Clients	97

Unit 5	Monitoring and Optimization	111
	Monitoring and Optimization	113
	Organization of Performance Monitor	113
	Key Server Components to Monitor	114
	Performance Monitor Views	116
Unit 6	Troubleshooting	123
	Troubleshooting Installation Errors	125
	Troubleshooting Boot Failures	126
	NT Boot Files	126
	Recovery of NT Boot Files	127
	Troubleshooting Configuration Errors	127
	Troubleshooting through the Event Viewer	128
	Troubleshooting Using Server Manager	129
	Troubleshooting Using Windows NT Diagnostics	130
	Troubleshooting with the Last Known Good Option	131
	Emergency Repair Disk (ERD)	132
	Troubleshooting through Control Panel	133
	Troubleshooting Print Errors	133
	Troubleshooting RAS Errors	134
	RAS Hardware	134
	Troubleshooting RAS Setup	134
	Troubleshooting Connectivity Problems	135
	Hardware Connectivity Errors	135
	Software Connectivity Errors	136
	Troubleshooting Resource Access and Permission Problems	139
	Local Access	139
	Network Access	140
	Resolving Disk Failures in a Fault-Tolerant Environment	141
	Tape Backup	141
	Disk Mirroring and Duplexing	141
	Stripe Set with Parity	142
Unit 7	Final Review	156
Appendix	Study Question and Sample Text Answers	171
Glossary	201