OSBORNE CERTIFICATION PRESS

MCSA
学习指南

MICROSOFT® CERTIFIED SYSTEMS ADMINISTRATOR

—— Managing a
Windows 2000
Network Environment

(Exam 70-218) （英文版）
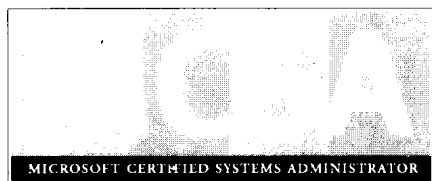
本书提供超过 5 5 0 道模拟试题

Mc Graw Hill **Education**

- 两个完整的 MasterExam
- 超过 30 个 MasterSim 实验
- 本书的电子文档

[美] Rory McCaw
Alan Simpson 著

MCSA 学习指南——
Managing a Windows 2000
Network Environment
(Exam 70–218)

（英文版）

[美] Rory McCaw Alan Simpson 著

版 权 声 明

ABOUT THE AUTHORS

Alan Simpson (MCSA) is the author of over 80 computer books published throughout the world in over a dozen languages. His award-winning titles have sold hundreds of thousands of copies and are best known for their light, engaging style and clear, straightforward approach to technical subjects. Alan has written books on operating systems (DOS, Windows, Linux), the Internet (HTML, JavaScript), databases, spreadsheets, word processing programs, and more. Prior to becoming an author, Alan worked as a software consultant, programmer, and teacher. Alan lives in Pennsylvania with his wife and two children.

Rory McCaw (MCSE, MCT, CTT) is an independent certified technical trainer and an accomplished, published author of numerous technical books with more than five years of experience in information technology. Rory's interest in writing led him to courseware development where he has designed courses focused on different Microsoft technologies. Rory holds numerous designations, including MCSE, MCT, and CTT. An accomplished speaker, Rory developed and delivered presentations for Microsoft at COMDEX and designs custom courses to meet the needs of his growing list of corporate clients.

For the last three years, Rory has been providing technical instruction to IT professionals, and consulting for large organizations on enterprise implementations of IIS and active directory. Prior to training, Rory filled the role of systems administrator for an Internet startup after graduating from university with a bachelor's degree in business administration and a major in management information systems.

About LearnKey

LearnKey provides self-paced learning content and multimedia delivery solutions to enhance personal skills and business productivity. LearnKey claims the largest library of rich streaming-media training content that engages learners in dynamic media-rich instruction complete with video clips, audio, full-motion graphics, and animated illustrations. LearnKey can be found on the Web at www.LearnKey.com.

ACKNOWLEDGEMENTS

We would like to thank the following people:

Every book is a team project, and this one is no exception. We'd like to give credit where credit is due, and thank the many people involved in turning this book from an idea to the finished product you now hold in your hands.

- At Osborne/McGraw Hill, many thanks to Tim Green, Jessica Wilson, Gareth Hancock, and those "behind the scenes" for their patience and support, and for giving us this opportunity.

- Many thanks to Matt Wagner, and everyone one at Waterside Productions, for bringing this opportunity to us.

To Susan, Ashley, and Alec, as always.

—Alan Simpson

This book's primary objective is to help you prepare for and pass the required core MCSA exam (70-218) so you can begin to reap the career benefits of certification. We believe that the only way we can accomplish this is to help you increase your knowledge and build your skills. After completing this book, you should feel confident that you have thoroughly reviewed all of the objectives that Microsoft has established for the exam.

In This Book

This book is organized in such a way as to serve as an in-depth review for the Microsoft Managing a Windows 2000 Network Environment exam for both experienced Windows NT and Windows 2000 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 2000 as a network administrator or engineer.

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:

- **Certification Objectives** begin every chapter and tell you what you need to know 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** 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 achieved 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 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 exam.

■ **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.

■ **From the Classroom** sidebars describe the issues that come up most often in the training classroom setting. These sidebars highlight some of the most common and confusing problems that students encounter when taking a live Windows 2000 training course. You can get a leg up on those difficult-to-understand subjects by focusing extra attention on these sidebars.

■ 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.

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

SCENARIO & SOLUTION

I changed my default gateway address, and adjusted the 003 Routers option at the DHCP server to match that change. How do I get clients to use the new setting?	You'll either need to reboot the clients, or enter an **ipconfig /renew** command at each client to get the new default gateway address to the client.
How can I see which addresses are currently leased, and how many are still available?	In the DHCP console, right-click the server name or the name of a specific scope and choose Display Statistics.

■ 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!

On the CD-ROM

This book includes a CD-ROM with simulation assessment and training software. Be sure to look through the software—there is more than one hour of interactive instructional video training, hundreds of practice test questions found only using the CD-ROM, and CertCam audio-visual demonstrations of many of the exercises from the book. The CD-ROM with this book also contains a bonus Chapter 20, "Installing and Managing Service Packs and Hotfixes," and the Glossary for the book. These features can only be accessed through the CD-ROM. For more information about the CD-ROM, please see Appendix A.

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. Reread 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 3×5 index cards that have the Two-Minute Drill material on them.

2. Reread 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. Retake 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, reread that section in the chapter.

INTRODUCTION

Welcome to *MCSA Managing a Windows® 2000 Network Environment Study Guide (Exam 70-218).* The purpose of this book is to provide you with the skills and knowledge required to get a great score on Microsoft's Exam 70-218: *Managing a Microsoft® Windows® 2000 Network Environment.* The information is presented in an organized, "from the bottom up" manner, explaining important basic concepts and terms before moving on to more complex issues. Such an approach helps to avoid the confusion that results from being thrown a bunch of seemingly disconnected technical facts, and helps you better see the "big picture." And understanding the big picture is an important part of passing Exam 70-218.

Why MCSA?

The Microsoft Certified Systems Administrator (MCSA) credential is the latest addition to Microsoft's list of certification options. It's also the most controversial, and has caused quite a bit of confusion among individuals who are already certified, as well as those seeking certification. For those of you who are new to the certification game, let me explain.

Microsoft has offered the Microsoft Certified Systems Engineer (MCSE) credential for several years. That credential is largely about networking with Microsoft products. It's a grueling course of study, and candidates must pass seven rigorous exams to achieve certification. MCSA is also about networking with Microsoft products. However, candidates need only pass four (or perhaps fewer) equally rigorous exams to become certified.

Many existing MCSEs are concerned that candidates with the MCSA credential will be competing for their jobs, and will be willing to accept less pay. However, it's important to bear in mind that the two credentials actually reflect two different types of jobs within an IT organization. Whereas the MCSE credential qualifies its holder to design new networks from the ground up, the MCSA is all about managing existing Windows 2000 and .NET server networks.

According to Microsoft, its recent research has shown that there's a "demand gap" in organizations between the number of Microsoft Windows 2000 system administrators needed and the number of skilled individuals available to do the job. The MCSA certification covers the job skills defined by the National Workforce Center for Emerging Technologies (NWCET) for the positions of network administrator, network technician, technical support specialist, systems administrator, information systems administrator, network engineer, and IT engineer. The MCSA credential was developed to help close the gap between the number of people needed to fulfill those jobs and the number of people currently available to do so. Microsoft claims that it is committed to informing hiring managers of the differences between MCSE and MCSA, so that those managers can better determine which individuals are best suited to specific jobs within the organization.

Who Qualifies for MCSA?

Microsoft suggests that an MCSA candidate should have 6 to 12 months of experience implementing and administering a desktop operating system and network operating system, and managing clients and servers in networking environments that have most of the following characteristics and requirements:

- From 200 to 26,000 supported users

- From 2 to 100 distinct physical locations

- Typical networking services and resources, including messaging, file and print sharing, database access, proxy servers or firewalls, client computer management, and remote access

- Connectivity that includes intranets, such as connecting branch offices to a corporate network, as well as connecting corporate networks to the Internet

Of course, the experience part always presents something of a catch-22. If you can't get the credential without the job experience, and can't get the job experience without the credential, how are you going to get either one? Fortunately, one can

acquire an MCSA credential without on-the-job experience. That's not to say that the exams are easy. In fact, the MCSA exams are as rigorous as the MCSE exams. But the student need only pass four exams for the MCSA, as opposed to seven for the MCSE.

The exams that the candidate must pass to qualify for the MCSA cover skills and concepts that can be learned by study, coupled with some hands-on experience with actual hardware. But that hardware need not be part of a production network in a large corporate environment. A small personal or classroom network can provide sufficient practice to pass all four exams. This allows younger students, and those with existing jobs outside of IT, the opportunity to get certified and accepted for a job within the IT industry.

MCSE vs. MCSA

Candidates seeking certification in Microsoft networking can achieve the MCSA first, and apply credits earned during that course of study to acquiring the more advanced MCSE credential. There are some advantages to going for the MCSA first:

■ MCSA is more readily attainable, because the certification can be achieved with as few as four exams, as opposed to the seven exams required for MCSE.

■ MCSA focuses on the modern Internet TCP/IP networking standards used in Windows 2000 and the .NET server products. Legacy systems, such as NetBIOS found in Windows NT, are de-emphasized in the MCSA track. So with MCSA, you'll be learning about technologies that have a long future ahead of them.

■ The MCSA credential shows potential employers that you have sufficient knowledge to administer existing Windows 2000 and .NET TCP/IP networks, which in turn opens the door to getting a job and the additional experience needed to get the more advanced MCSE certification.

So in the long run, the MCSA credential is good for employers and employees alike. If you're new to the IT field, the MCSA is a great first step for a new career.

MCSA Requirements

Achieving the MCSA credential is no small feat. You must pass one Client Operating System exam, and two Network System Exams, as summarized in the following table.

Exam	Alternative
Client Operating System Exams (one required)	.
Exam 70-210: Installing, Configuring, and Administering Microsoft Windows 2000 Professional or Exam 70-270: Installing, Configuring, and Administering Microsoft Windows XP Professional	As an alternative to exams 70-210 and 70-215, candidates who have passed Windows NT 4.0 Exams 70-067, 70-068, and 70-073 have the option to take Exam 70-240: Microsoft Windows 2000 Accelerated Exam for MCPs Certified on Microsoft Windows NT 4.0.
Network System Exams (two required)	
Exam 70-215: Installing, Configuring, and Administering Microsoft Windows 2000 Server or Exam 70-275: Installing, Configuring, and Administering Microsoft Windows .NET Server	Exam 70-240 as described earlier
Exam 70-218: Managing a Microsoft Windows 2000 Network Environment (available January 2002) or Exam 70-278: Managing a Microsoft Windows .NET Server Network Environment	None

In addition to the core exams, you must pass one of the following elective exams:

- Exam 70-028: Administering Microsoft SQL Server 7.0
- Exam 70-081: Implementing and Supporting Microsoft Exchange Server 5.5
- Exam 70-086: Implementing and Supporting Microsoft Systems Management Server 2.0
- Exam 70-088: Implementing and Supporting Microsoft Proxy Server 2.0

■ Exam 70-216: Implementing and Administering a Microsoft Windows 2000 Network Infrastructure

■ Exam 70-240: Microsoft Windows 2000 Accelerated Exam for MCPs Certified on Microsoft Windows NT 4.0

■ Exam 70-224: Installing, Configuring, and Administering Microsoft Exchange 2000 Server

■ Exam 70-227: Installing, Configuring, and Administering Microsoft Internet Security and Acceleration (ISA) Server 2000, Enterprise Edition

■ Exam 70-228: Installing, Configuring, and Administering Microsoft SQL Server 2000 Enterprise Edition

■ Exam 70-244: Supporting and Maintaining a Microsoft Windows NT Server 4.0 Network

■ CompTIA A+ and CompTIA Network+ or CompTIA A+ and CompTIA Server+

exam
ⓦatch   *The table lists the requirements at the time of this writing. Requirements and exam availability change from time to time—get in the habit of checking www.microsoft.com/ periodically so that you are aware of any program changes that might occur.*

As you can see from the core exams and electives, certain candidates can use existing credentials as proven competence within an area of expertise. For example, MCPs who passed Exam 70-240: *Microsoft Windows 2000 Accelerated Exam for MCPs* before January 1, 2002 can use that credential as an alternative to taking the core exams 70-210 and 70-215 for MCSA, the reason being that accelerated exam 70-240 covers the most important elements of exams 70-210, 70-215, 70-216, and 70-217. Therefore, passing exam 70-240 shows that the candidate already possesses the skills needed to pass exams 70-210 and 70-215.

MCSEs who wish to acquire an MCSA credential might need to take only Exam 70-218: *Managing a Microsoft Windows 2000 Network Environment* to earn the MCSA certification, depending on which electives they passed to achieve MCSE status.

Professionals who have already attained CompTIA's A+, Server+, or Network+ certification will have a leg up on attaining their MCSA certification. A+ certification coupled with either the Server+ or Network+ certification can be used as an elective

for the MCSA track, thereby reducing the number of Microsoft exams required to pass to three.

Professionals who currently hold non-Microsoft vendor-specific certifications aren't quite so lucky. As a rule, vendor-specific certifications such as Cisco's CCNA cannot be used as electives for the MCSA exam.

Exam Credit

When you pass Exam 70-218, you immediately achieve the status of Microsoft Certified Professional (MCP), and earn credit toward two other certifications:

- **Core credit** toward MCSA (Microsoft Certified System Administrator on Microsoft Windows 2000) certification

- **Elective credit** toward MCSE (Microsoft Certified Systems Engineer on Microsoft Windows 2000) certification

Skills Being Measured

Exam 70-218 is very broad in depth, measuring your ability to administer, support, and troubleshoot large-scale information systems that incorporate Microsoft Windows 2000. You can view the complete set of skills being measured at the MCSA web site at www.microsoft.com/traincert/mcp/mcsa/requirements.asp. According to Microsoft, the following is a quick summary of what you'll be faced with on the exam.

Configuring, Administering, and Troubleshooting the Network Infrastructure

- Configure and troubleshoot TCP/IP on servers and client computers including subnet masks, default gateways, network IDs, and broadcast addresses

- Configure client computer TCP/IP properties

- Troubleshoot routing and network connectivity using the **ipconfig, route, pathping,** and other commands

Managing Name Resolution on Client Computers

■ Identify name resolution resources including DNS, WINS, NetBIOS, the HOSTS file, and the LMHOSTS file

■ Configure client computer name resolution properties

■ Troubleshoot name resolution problems using **nbtstat, ipconfig, nslookup,** and other commands

Configuring, Administering, and Troubleshooting DNS

■ Install DNS and create DNS zones

■ Configure Active Directory-integrated DNS zones

■ Manage DNS database records including A, PTR, and CNAME records

■ Configure dynamic DNS (DDNS) to automatically add new servers and clients to the DNS namespace

■ Configure client computers to use DNS

Configuring, Administering, and Troubleshooting DHCP

■ Install and authorize DHCP servers

■ Configure DHCP server scopes

■ Configure client computers to use dynamic IP addressing

■ Detect unauthorized DHCP servers on a network

Configuring, Managing, and Securing Active Directory

■ Create, manage, and troubleshoot Active Directory groups; considerations include nesting, scope, and type

■ Create and manage user accounts in Active Directory Users and Computers

■ Create and manage organizational units (OUs)

■ Use the Delegation of Control Wizard to delegate tasks to OU administrators

Creating, Implementing, and Troubleshooting Group Policies

- Create and manage group policies at the domain, OU, and group levels
- Implement and manage security policies by using group policy
- Troubleshoot group policy problems involving precedence, inheritance, filtering, and the **No Override** option

Publishing Resources in Active Directory

- Configure a printer object
- Publish and assign network resources
- Deploy user applications, antivirus software, line-of-business applications, and software updates using group policy
- Configure and troubleshoot object permissions by using object access control lists (ACLs)
- Share folders and enable Web sharing
- Search for resources in Active Directory

Implementing Security Policies

- Create domain security policy to comply with corporate standards
- Use security templates to implement security policies
- Analyze the security configuration of a computer using Security Configuration and Analysis and the **secedit** command

Troubleshooting Active Directory

- Diagnose Active Directory replication problems and problems related to WAN links
- Recover lost user accounts
- Manually refresh group policy