

Cisco 专业技术丛书

CCNA 2.0

学习指南 英文版

CCNA Cisco Certified Network Associate Study Guide, Second Edition (Exam 640-507)

(考试号: 640-507)

附赠



(美) Syngress Media 公司 著



机械工业出版社
China Machine Press



Education

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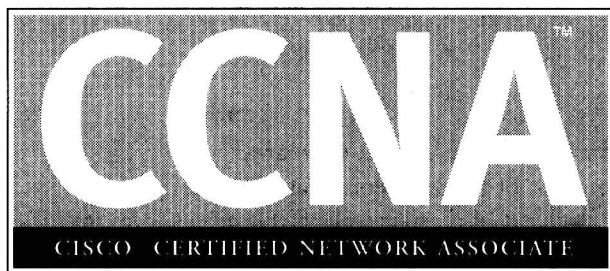
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FOREWORD

From Global Knowledge

At Global Knowledge we strive to support the multiplicity of learning styles required by our students to achieve success as technical professionals. In this series of books, it is our intention to offer the reader a valuable tool for successful completion of the CCNA™ Certification Exam.

As the world's largest IT training company, Global Knowledge is uniquely positioned to offer these books. The expertise gained each year from providing instructor-led training to hundreds of thousands of students worldwide has been captured in book form to enhance your learning experience. We hope that the quality of these books demonstrates our commitment to your lifelong learning success. Whether you choose to learn through the written word, computer-based training, Web delivery, or instructor-led training, Global Knowledge is committed to providing you the very best in each of those categories. For those of you who know Global Knowledge, or those of you who have just found us for the first time, our goal is to be your lifelong competency partner.

Thank you for the opportunity to serve you. We look forward to serving your needs again in the future.

Warmest regards,

A handwritten signature in black ink, appearing to read "Duncan Anderson". The signature is fluid and cursive, with a large initial "D".

Duncan Anderson
President and Chief Executive Officer, Global Knowledge

The Global Knowledge Advantage

Global Knowledge has a global delivery system for its products and services. The company has 28 subsidiaries, and offers its programs through a total of 60+ locations. No other vendor can provide consistent services across a geographic area this large. Global Knowledge is the largest independent information technology education provider, offering programs on a variety of platforms. This enables our multi-platform and multi-national customers to obtain all of their programs from a single vendor. The company has developed the unique CompetusTM Framework software tool and methodology which can quickly reconfigure courseware to the proficiency level of a student on an interactive basis. Combined with self-paced and on-line programs, this technology can reduce the time required for training by prescribing content in only the deficient skills areas. The company has fully automated every aspect of the education process, from registration and follow-up, to "just-in-time" production of courseware. Global Knowledge, through its Enterprise Services Consultancy, can customize programs and products to suit the needs of an individual customer.

Global Knowledge Classroom Education Programs

The backbone of our delivery options is classroom-based education. Our modern, well-equipped facilities staffed with the finest instructors offer programs in a wide variety of information technology topics, many of which lead to professional certifications.

Custom Learning Solutions

This delivery option has been created for companies and governments that value customized learning solutions. For them, our consultancy-based approach of developing targeted education solutions is most effective at helping them meet specific objectives.

Self-Paced and Multimedia Products

This delivery option offers self-paced program titles in interactive CD-ROM, videotape and audio tape programs. In addition, we offer custom development of interactive multimedia courseware to customers and partners. Call us at 1 (888) 427-4228.

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Our network-based training service delivers efficient competency-based, interactive training via the World Wide Web and organizational intranets. This leading-edge delivery option provides a custom learning path and "just-in-time" training for maximum convenience to students.

ARG

American Research Group (ARG), a wholly-owned subsidiary of Global Knowledge, one of the largest worldwide training partners of Cisco Systems, offers a wide range of internetworking, LAN/WAN, Nortel Networks, FORE Systems, IBM, and UNIX courses. ARG offers hands on network training in both instructor-led classes and self-paced PC-based training.

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- Telecommunications Fundamentals II
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- Introduction to Wide Area Networking
- Cabling Voice and Data Networks
- Introduction to LAN/WAN protocols
- Virtual Private Networks
- ATM Essentials

Network Security & Management

- Troubleshooting TCP/IP Networks
- Network Management
- Network Troubleshooting
- IP Address Management
- Network Security Administration
- Web Security
- Implementing UNIX Security
- Managing Cisco Network Security
- Windows NT 4.0 Security

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- Advanced Project Management for IT Professionals
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- Making IT Teams Work

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- Cisco Internetwork Design
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- Catalyst 5000 Series Configuration
- Cisco LAN Switch Configuration
- Managing Cisco Switched Internetworks
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- Bay Networks Advanced IP Routing
- Bay Networks Hub Connectivity
- Bay Networks Accelar 1xxx Installation and Basic Configuration
- Bay Networks Centillion Switching

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- FORE ATM Enterprise Edge Products
- FORE ATM Theory
- FORE LAN Certification

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- Advanced Windows NT 4.0 Server
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- DIGITAL UNIX v4.0 (TCP/IP) Network Management
- AdvFS, LSM, and RAID Configuration and Management
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- DIGITAL UNIX v4.0 Security Management
- DIGITAL UNIX v4.0 Performance Management
- DIGITAL UNIX v4.0 Intervals Overview

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- OpenVMS System and Network Node Management II
- OpenVMS System and Network Node Management III
- OpenVMS System and Network Node Operations
- OpenVMS for Programmers
- OpenVMS System Troubleshooting for Systems Managers
- Configuring and Managing Complex VMScluster Systems
- Utilizing OpenVMS Features from C
- OpenVMS Performance Management
- Managing DEC TCP/IP Services for OpenVMS
- Programming in C

Hardware Courses

- AlphaServer 1000/1000A Installation, Configuration and Maintenance
- AlphaServer 2100 Server Maintenance
- AlphaServer 4100, Troubleshooting Techniques and Problem Solving

ABOUT THE CONTRIBUTORS

About Syngress Media

Syngress Media creates books and software for Information Technology professionals seeking skill enhancement and career advancement. Its products are designed to comply with vendor and industry standard course curricula, and are optimized for certification exam preparation. You can contact Syngress via the Web at www.syngress.com.

Contributors

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John has taught thousands of students how to configure Cisco routers and switches, design and troubleshoot complex networks, and earn various Cisco/Microsoft/Citrix certifications. John is currently working on www.dynacomp.com, which will offer a virtual lab solution for the CCNA/CCNP certifications. John, his wife, Gail, their son, Christopher, and daughter, Julia, reside in Fort Lauderdale, Florida.

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John's experience includes a number of years supporting desktop clients, as well as network administration and architecture development in both Windows NT/2000 and Netware environments. John graduated from Salisbury State University in Salisbury, Maryland, with a BS in Geography, and holds a membership with the Network Professional Association. John lives in Phoenixville, Pennsylvania, with his wife and two children.

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Brad Lucas is a Network Engineer for AT&T Solutions. His primary responsibilities include troubleshooting remote sites connected to various networks. During his spare time, Brad enjoys outdoor activities such as camping, hunting, and fishing. Brad would like to dedicate his work to Jesus Christ in thanking him for all of the blessings that he has received. He would also like to extend his thanks to Dana and Ryan Johnson and the Havens family.

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More information about Damon Merchant and his software products can be found at his company's Web site, www.corbus-systems.com. Damon can be e-mailed at damon@corbus-systems.com.

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In his free time he enjoys spending time with his family and boating. He currently lives in Raleigh, North Carolina. Mark is Series Editor for Syngress Cisco books.

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PREFACE

This book's primary objective is to help you prepare for and pass the CCNA Cisco Certified Network Administrator exam, so you can reap the career benefits of certification. We believe that the only way to do this is to help you increase your knowledge and build your skills. After completing this book, you should feel confident that you have learned the necessary skills Cisco has established for the exam.

In This Book

This book is organized around the topics covered within the Cisco exam administered at Sylvan Testing Centers. 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 the Cisco line of products.

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!
- **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.



- **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 CCNA training course. You can get a leg up on those difficult to understand subjects 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

What are the two main types of encapsulation that can be used on a Frame Relay connection?	Frame Relay PPP
What is a common example of a Circuit-Switched network?	ISDN
What command would you issue in a Cisco router to see the encapsulation options on a serial link?	Encapsulation ? (in interface configuration mode)

- 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 proved 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 3×5 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 SOS 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, reread that section in the chapter.