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# CCIE 路由与交换 认证考试指南(英文版)

# **CCIE** Routing and Switching

**Exam Certification Guide** 

The official preparation guide for the CCIE Routing and Switching written exam



### Cisco 职业认证培训系列 (910) 目除洲五年图

CIE 路由与交换认证考试指南/(美)布鲁诺(Bruso, A-A-)音,一房中全

# CCIE 路由与交換认证考试指南

(Cisco 职业认**用目** 

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Original editional CCIE Routing and Switching Exam Certification Guide, 1st Edition, 1587200538, by As Arthony Bruno, published by Pearson Education, Inc., publishing as Cisco Press, Copyright Q 2003 by Cisco

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销售发行

得销售

江苏工业学院图书馆 荔 北 音

人民邮电出版社

### 图书在版编目(CIP)数据

CCIE 路由与交换认证考试指南 / (美) 布鲁诺 (Bruno, A. A.) 著. 一影印本.

一北京: 人民邮电出版社, 2003. 8

(Cisco 职业认证培训系列)

ISBN 7-115-11358-0

I. C... II. 布... III. 计算机网络一路由选择一工程技术人员一资格考核一自学参考资料一英文 IV. TP393

中国版本图书馆 CIP 数据核字(2003)第 048147号

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### Cisco 职业认证培训系列

### CCIE 路由与交换认证考试指南(英文版)

- ◆ 著 [美]A. Anthony Bruno, CCIE #2738 责任编辑 李 际
- ◆ 人民邮电出版社出版发行 北京市崇文区夕照寺街 14 号邮编 100061 电子函件 ciscobooks @ptpress.com.cn 网址 http://www.ptpress.com.cn 读者热线 010-67132705 北京汉魂图文设计有限公司制作 北京顺义振华印刷厂印刷 新华书店总店北京发行所经销
- ◆ 开本: 800×1000 1/16

印张: 47.75

字数: 1018千字

2003年8月第1版

印数: 1-2500册

2003年8月北京第1次印刷

著作权合同登记 图字: 01-2003-1490号

ISBN 7-115-11358-0/TP • 3508

定价: 88.00 元 (附光盘)

本书如有印装质量问题,请与本社联系 电话:(010)67129223

### 内容提要

本书讲述了 CCIE 路由选择与交换技术(R&S)书面考试将会涉及的全部内容,此外,还介绍了 CCIE 通信与业务(C&S)书面考试中与网络相关的内容。全书内容包括网络概念、设备操作、桥接与局域网(LAN)交换技术、广域网(WAN)、IP 及 IP 路由选择协议、网络安全性,以及多服务网络等等。

本书在介绍基本内容的同时,还提供了多种评估工具,以检查自己对某些内容的掌握情况。这样的评估工具包括小测试、问题与答案、实践模拟练习以及 CD-ROM 中提供的 200 多道练习题。

本书适合准备参加 CCIE 认证考试的读者,也可供相关 网络技术人员参考。

### **About the Author**

A. Anthony Bruno is a Principal Consultant with International Network services and has over 11 years of experience in the internetworking field. His network certifications include CCIE, CWNA, CCDP, CCNA-WAN, Microsoft MCSE, Nortel NNCSS, Checkpoint CCSE, and Certified Network Expert (CNX) in Ethernet. As a consultant, he has worked with many enterprise and service provider customers in the design, implementation, and optimization of large-scale multiprotocol networks. Anthony has worked on the design of large company network mergers, wireless LANs, Voice over IP, and Internet access. He formerly worked as an Air Force Captain in network operations and management. He completed his B.S. degree in electrical engineering from the University of Missouri-Rolla in 1994 and his M.S. degree in electrical engineering from the University of Puerto Rico-Mayaguez in 1990. Anthony is also a part-time instructor for the University of Phoenix-Online, teaching networking courses.

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Galina has been an academic teacher at York University, teaching computer science, data communications, and computer network courses. Gaining extensive technical experience in internetworking and the Cisco line of products, she received her Routing and Switching CCIE certification in 1997. Upon achieving her CCIE, Galina dedicated a majority of her professional career to training and mentoring CCIE candidates by taking on the role of technical director for Netgun Academy CCIE preparation program at Global Knowledge Network, Inc. Deploying her passion for teaching, Galina taught a variety of Cisco courses. Upon joining Juniper Networks, Galina received one of the industry's toughest certifications—Juniper Networks Certified Internet Expert (JNCIE). Galina continues to teach at Juniper, enjoying state-of-the-art technology. Her areas of interest and specialization are ATM, internetwork design and optimization, VoIP, VPNs, MPLS, and Wireless technologies. One of Galina's most recent publications is *Cisco ATM Solutions* from Cisco Press. In addition to the demanding professional work, Galina, her husband, their two children, and their dog, who is a Canadian Champion, enjoy spending those rare moments together traveling, skiing, and cycling.

### **Dedications**

This book is dedicated to my parents, Augustus Anthony Bruno, Sr. and Iris Belia Bruno. Thanks for your guidance and teaching during my "growing up" years. Dad: Thanks for the VIC20 computer. Also, I wish to dedicate this book to my sister, Anjanette.

# Acknowledgments

This book would not have been possible without the efforts of many dedicated people. First, thanks to Andrew Cupp, Development Editor, whose guidance and expertise has improved this book, making it a better test guide for the readers. Thanks to Michelle Grandin, Acquisitions Editor, for giving me the opportunity to write this book. Thanks to Brett Bartow, Executive Editor, for your guidance. And special thanks to John Kane, Editor-in-Chief, for getting me started with Cisco Press in 1999.

Thanks to Roy Spencer for contributing the ATM material in the WAN chapter.

Thanks to the technical reviewers, Galina Pildush and Jennifer Carroll. Your advice and careful attention to detail significantly improved this book.

I also want to thank my boss of four years, Randy Kunkel, Managing Principal. Thanks for your support during this time.

Finally, I wish to thank my loving wife, Ivonne, and our daughters, Joanne Nichole and Dianne Christine, for their support during the development of this book.

### **Foreword**

"The will to succeed is useless without the will to prepare"...Henry David Thoreau

The CCIE program is designed to help individuals, companies, industries, and countries succeed in an era of increasing network reliance by distinguishing the top echelon of internetworking experts. If that sounds like a lofty mission, then our standards for excellence are equally high.

To achieve the CCIE certification is to ascend the pinnacle of technical excellence in the IT profession. While CCIEs inevitably gain extensive product knowledge on their way to certification, product training is not the program objective. Rather, the focus is on identifying those experts capable of understanding and navigating the intricacies and potential pitfalls inherent in end-to-end networking, regardless of technology or product brand.

The first step along the CCIE path is for individuals to take a challenging written exam designed to assess their knowledge across a range of technologies and topologies relevant today. If their scores indicate expert-level knowledge, candidates then proceed to the performance-based CCIE Certification Lab Exam. Administered only by Cisco Systems, this hands-on exam truly distinguishes the CCIE program from all others. Candidates must demonstrate true mastery of internetworking through a series of timed exercises under intense conditions simulating today's mission-critical IT world.

Becoming CCIE Certified requires significant investment in education and preparation by each candidate. Moreover, a rigorous and mandatory biyearly recertification process ensures the commitment is long lasting and helps guarantee program integrity. These rigid requirements ensure that CCIEs are leaders with a proven and enduring commitment to their career, the industry, and the process of ongoing learning.

Cisco does not require candidates to complete specific training in preparation for either the written exam or the performance-based component of the CCIE certification process. The program is intended to identify hands-on experience and acquired expertise rather than the completion of specified course work. If you have committed yourself to beginning the journey toward achieving CCIE certification, CCIE Routing and Switching Exam Certification Guide can help ensure that your valuable preparation time is invested wisely. By providing candidates with typical exam subject matter, topic summaries, and practice and review questions that test the comprehensive networking knowledge expected, the CCIE Routing and Switching Exam Certification Guide can greatly assist in certification preparation. It offers you complete, late-stage exam preparation guidance that will enable you to assess your strengths and weaknesses and focus your study where you need the most help.

Lorne Braddock
Director, CCIE Program Group
Cisco Systems, Inc.

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