

<<TCP/IP 路由技术>>

图书基本信息

书名：<<TCP/IP 路由技术>>

13位ISBN编号：9787115210999

10位ISBN编号：7115210993

出版时间：2009-9

出版单位：人民邮电出版社

作者：（美）多伊尔，（美）卡罗尔 著

页数：945

版权说明：本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问：<http://www.tushu007.com>

<<TCP/IP 路由技术>>

内容概要

本书深入系统地阐述了TCP/IP路由技术，内容包括几种重要的网络协议，如外部网关协议（EGP）、边界网关协议（BGP4），以及相应的高级IP路由技术与应用——网络地址转换、IP组播路由技术、IPv6技术、路由器管理等。

本书共分9章，首先介绍并讨论了有关主题的基本原理，接着是设计用来展示实际网络环境中相关概念的一系列配置范例，最后提供给读者经实践验证过的故障排除方法以解决网络可能会出现的问题。重点介绍了自治系统之间的路由选择策略以及诸如组播和IPv6等更具挑战性的路由选择和实施技术。

本书内容全面，可读性强，含有协议配置、网络实施、故障排除等方面的大量实例，是备战CCIE认证考试的经典之作，适合准备参加CCIE考试的人员、网络与通信系统工程技术人员的阅读。

<<TCP/IP 路由技术>>

作者简介

Jeff Doyle , CCIE #1919 , is a Professional Services Consultant with Juniper Networks , Inc. in Denver , Colorado. Specializing in IP routing protocols and MPLS Traffic Engineering , Jeff has helped design and implement large-scale Internet service provider networks throughout North America , Europe , and Asia. Jeff has also lectured on advanced networking technologies at service provider forums such as the North American Network Operators Group (NANOG) and the Asia Pacific Regional Internet Conference on Operational Technologies (APRICOT) . Prior to joining Juniper Networks , Jeff was a Senior Network Systems Consultant with International Network Services. Jeff can be contacted at jeff@juniper.net. Jennifer DeHaven Carroll , is a principal consultant with Lucent technologies and is a Cisco Certified Internet Network Expert (CCIE # 1402) . She has planned , designed , and implemented many large networks over the past 13 years. She has also developed and taught theory and Cisco implementation classes on all IP routing protocols. Jenny can be reached at jennifer.carroll@ieee.org. About the Technical Reviewers Henry Benjamin , CCIE #4695 , CCNA , CCDA , B. Eng. , is a Cisco certified Internet Expert and an IT Network Design Engineer for Cisco Systems , Inc. He has more than eight years of experience in Cisco networks , including planning , designing , and implementing large IP networks running IGRP , EIGRP , and OSPF. Currently Henry is working for the IT design team internally at Cisco in Sydney , Australia. Henry holds a Bachelor of Engineering degree from Sydney University. Peter J. Moyer , CCIE #3286 , is a Professional Services Consultant for Juniper Networks , where he designs and implements large-scale ISP networks. In addition to his consulting work , Peter has developed and delivered advanced IP training courses and IP network design seminars to Juniper customers and partners. He has presented at networking conferences on such advanced topics as MPLS. Before joining Juniper , Peter was a Senior Network Consultant for International Network Services (INS) , where he designed and implemented large-scale enterprise networks. Peter holds a Bachelor of Science degree in Computer and Information Science from the University of Maryland.

<<TCP/IP 路由技术>>

书籍目录

Part I	Exterior Gateway Protocols	Chapter 1	Exterior Gateway Protocol	The Origins of EGP
	Operation of EGP		EGP Topology Issues	EGP Functions
	Shortcomings of EGP		Configuring EGP	EGP Message Formats
Study:	An EGP Core Gateway		Case Study: An EGP Stub Gateway	Case
	Troubleshooting EGP		Case Study: Indirect Neighbors	Case Study: Default Routes
Speed of Syrup	End Notes		Interpreting the Neighbor Table	Case Study: Converging at the
Exercises	Troubleshooting Exercise	Chapter 2	Looking Ahead	Review Questions
	Classless Interdomain Routing		Introduction to Border Gateway Protocol 4	Configuration
	Summarization: The Good, the Bad, and the Asymmetric		A Summarization Summary	Classless Routing
These Years	CIDR: Reducing Routing Table Explosion		The Internet: Still Hierarchical After All	
Space Depletion	Difficulties with CIDR		CIDR: Reducing Class B Address	
Autonomous System	Multihoming to a Single Autonomous System		Who Needs BGP?	A Single-Homed
Autonomous Systems	A Note on " Load Balancing "		BGP Hazards	Multihoming to Multiple
	BGP Message Types		The BGP Finite State Machine	BGP Basics
	Administrative Weight		AS_SET	Path Attributes
	IBGP and IGP Synchronization		The BGP Decision Process	Route Dampening
	Communities		Managing Large-Scale BGP Peering	Peer Groups
Open Message	Route Reflectors		Confederations	BGP Message Formats
Message	The Update Message		The Keepalive Message	The Notification
	End Notes		Looking Ahead	Review Questions
	Chapter 3		Configuring and Troubleshooting Border Gateway Protocol 4	Basic BGP Configuration
	Case Study: Peering BGP Routers		Case Study: Injecting IGP Routes into BGP	Case
Study:	Injecting BGP Routes into an IGP		Case Study: IBGP without an IGP	Case Study: IBGP
Over an IGP	Case Study: EBGW Multihop		Case Study: Aggregate Routes	Managing
BGP Connections	Routing Policies		Resetting BGP Connections	Case Study: Filtering
Routes by NLRI	Case Study: Filtering Routes by AS_PATH		Case Study: Filtering with Route	
Maps	Case Study: Administrative Weights		Case Study: Administrative Distances and Backdoor	
Routes	Case Study: Using the LOCAL_PREF Attribute 241		Case Study: Using the	
MULTI_EXIT_DISC Attribute	Case Study: Prepending the AS_PATH		Case Study: Route	
Tagging	Case Study: Route Dampening		Large-Scale BGP	Case Study: BGP Peer
Groups	Case Study: BGP Communities		Case Study: Private AS Numbers	Case Study:
BGP Confederations	Case Study: Route Reflectors		Looking Ahead	Recommended
Reading	Command Summary		Configuration Exercises	Troubleshooting Exercises
	Advanced IP Routing Issues	Chapter 4	Network Address Translation	Operation of NAT
	Basic NAT Concepts		NAT and IP Address Conservation	NAT and ISP Migration
	NAT and Multihomed Autonomous Systems		Port Address Translation	NAT and TCP Load
Distribution	NAT and Virtual Servers		NAT Issues	Header Checksums
Fragmentation	Encryption		Security	Protocol-Specific Issues
NAT	Case Study: Static NAT		Case Study: Dynamic NAT	Configuring
Merger	Case Study: ISP Multihoming with NAT		Port Address Translation	Case Study: A Network
Study:	TCP Load Balancing		Case Study: Service Distribution	Troubleshooting NAT
Note	Looking Ahead		Command Summary	Configuration Exercises
	Troubleshooting Exercises	Chapter 5	Introduction to IP Multicast Routing	Requirements for IP
Multicast	Multicast IP Addresses		Group Membership Concepts	Internet Group
Management Protocol (IGMP)	Cisco Group Membership Protocol (CGMP)		Multicast Routing	Multicast Routing
Issues	Multicast Forwarding		Multicast Routing	Sparse Versus Dense Topologies

<<TCP/IP 路由技术>>

Implicit Joins Versus Explicit Joins	Source-Based Trees Versus Shared Trees	Multicast
Scoping	Operation of the Distance Vector Multicast Routing Protocol (DVMRP)	Neighbor
Discovery and Maintenance	The DVMRP Routing Table	DVMRP Packet Forwarding
DVMRP Message Formats	Operation of Multicast OSPF (MOSPF)	MOSPF Basics
Inter-Area MOSPF	Inter-AS MOSPF	MOSPF Extension Formats
Core-Based Trees (CBT)	CBT Basics	Finding the Core
Member and Nonmember Sources	CBT Message Formats	CBT Designated Routers
Independent Multicast (PIM)	Operation of Protocol Independent Multicast, Dense Mode (PIM-DM)	Introduction to Protocol
PIM-DM Basics	Prune Overrides	Unicast Route Changes
PIM-DM-Designated Routers	PIM Forwarder Election	Operation of Protocol Independent
Multicast, Sparse Mode (PIM-SM)	PIM-SM Basics	Finding the Rendezvous Point
PIM-SM and Shared Trees	Source Registration	PIM-SM and Shortest Path Trees
PIMv2 Message Formats	End Notes	Looking Ahead
Command Summary	Review Questions	Chapter 6
Multicast Routing	Configuring IP Multicast Routing	Configuring and Troubleshooting IP
Protocol-Independent Multicast, Dense Mode (PIM-DM)	Case Study: Configuring	Configuring Protocol-Independent
Multicast, Sparse Mode (PIM-SM)	Case Study: Multicast Load Sharing	Troubleshooting IP
Multicast Routing	Using mrimfio	Using mtrace and mstat
Configuration Exercises	Troubleshooting Exercises	Chapter 7
Multicast Scoping	Case Study: Multicasting Across Non-Multicast Domains	Large-Scale IP Multicast Routing
to DVMRP Networks	Inter-AS Multicasting	Multiprotocol Extensions for BGP (MBGP)
Operation of Multicast Source Discovery Protocol (MSDP)	MSDP Message Formats	Case
Study: Configuring MBGP	Case Study: Configuring MSDP	Case Study: MSDP Mesh Groups
Case Study: Anycast RP	Case Study: MSDP Default Peers	Command Summary
Notes	Looking Ahead	Review Questions
IPv6	Improve Scalability	Ease of Configuration
Format	IPv6 Specification (RFCs)	Vendor Support
Enabling IPv6 Capability on a Cisco Router	The IPv6 Address	Address Structure
Autoconfiguration	Routing	ICMPv6
Service	Transition from IPv4 to IPv6	Dual Stacks
Network Address Translation-Protocol Translation	End Notes	DNS
Recommended Reading	Review Questions	Chapter Bibliography
Management	Policies and Procedure Definition	Service Level Agreements
Management	Escalation Procedures	Updating Policies
Protocol	Overview of SNMP	CiscoWorks
RMON	Overview of RMON	Router Configuration for RMON
Syslog	Overview of Syslog	Router Configuration for Syslog
Overview of NTP	Router Configuration for NTP	Accounting
NetFlow	Configuration Management	Fault Management
Management	Security Management	Password Types and Encryption
Interactive Access	Minimizing Risks of Denial-of-Service Attacks	TACACS+
RADIUS	Secure Shell	Designing Servers to Support Management Processes
Robustness	HSRP	Lab
Command Summary	Review Questions	Configuration Exercises
III	Appendixes	Appendix A
Regular-Expression Tutorial	Literals and Metacharacters	Delineation: Matching the Start and End

<<TCP/IP 路由技术>>

of Lines	Bracketing: Matching a Set of Characters 816	Negating: Matching Everything Except a Set of
Characters	Wildcard: Matching Any Single Character	Alternation: Matching One of a Set of
Characters	Optional Characters: Matching a Character That May or May Not Be There	Repetition:
Matching a Number of Repeating Characters	Boundaries: Delineating Literals	Putting It All
Together: A Complex Example	Recommended Reading	Appendix C Reserved Multicast Addresses
Internet Multicast Addresses	References	People
Questions	Appendix D	Answers to Review
Answers to Chapter 1 Review Questions	Answers to Chapter 2 Review Questions	
Answers to Chapter 5 Review Questions	Answers to Chapter 7 Review Questions	Answers to
Chapter 8 Review Questions	Answers to Chapter 9 Review Questions	Appendix E
Configuration Exercises	Answers to Chapter 1 Configuration Exercises	Answers to
Configuration Exercises	Answers to Chapter 4 Configuration Exercises	Answers to Chapter 3
Configuration Exercises	Answers to Chapter 9 Configuration Exercises	Answers to Chapter 6
Troubleshooting Exercises	Answer to Chapter 1 Troubleshooting Exercise	Appendix F
Troubleshooting Exercises	Answers to Chapter 4 Troubleshooting Exercises	Answers to
Troubleshooting Exercises		Answers to Chapter 3
		Answers to Chapter 6
	Index	

章节摘录

Of course, in real life, few corporations the size of the one depicted in Figure 2-9 have the luxury of being designed "from the ground up" in such a coordinated, logical fashion. Many, if not most, large internetworks have evolved from smaller internetworks that have been merged as divisions and corporations have merged. The result is that different network administrators have made different design choices for the various parts of the internetwork; when the parts are merged, the first order of business is basic interoperability. The second order of business might be the enforcement of routing policies. Some traffic from some domains of the internetwork to other domains may be required to always prefer certain links or routes, for example, or perhaps only certain routes should be advertised between domains. In most cases, the necessary policies can still be implemented with redistribution between IGPs and tools such as route filters and route maps. You should implement BGP only when a sound engineering reason compels you to do so, such as when the IGPs do not provide the tools necessary to implement the required routing policies or when the size of the routing tables cannot be controlled with summarization. BGP proves useful, for instance, when many different IGPs are used in the domains. Here, BGP might be simpler to implement than attempting to redistribute among all the IGPs. When considering whether BGP is necessary in an internetwork design, keep in mind why exterior routing protocols were invented in the first place. Exterior routing protocols are used to route between autonomous systems—that is, between internetwork domains under different administrative authorities. In a single corporate internetwork, even a large one with different domains under different local administrations, there is usually enough of a centralized authority to impose routing policy using the tools available with interior routing protocols. When separate autonomous systems must interconnect, however, BGP might be called for.

<<TCP/IP 路由技术>>

编辑推荐

《TCP/IP 路由技术 (第2卷)(英文版)(精)》都将帮助您理解各种基本概念, 并应用各种最佳实践技巧来应对网络的日益增长和有效管理等问题。

掌握BGP-4 (事实上的域间路由协议标准) 的操作、配置及故障检测与排除: 理解NAT的操作、配置及故障检测与排除: 通过一系列案例研究及练习题来理解IP多播路由的部署、配置及故障检测与排除: 熟悉IPv6 (下一代IP协议) 的设计目标以及当前的发展状态: 通过大量经专家验证的方法来管理路由器: 通过大量实用且全面的复习题、配置练习题及故障检测与排除练习题来测试和验证各种所学知识: 在掌握高级TCP / IP路由技术的同时, 还可以进一步加强CCIE的认证准备工作。

为了管理日益增大的互连网络, 需要全面理解路由器的操作行为。

理解外部网关协议的各种复杂运行机制。

包括TCP连接、消息状态、路径属性、内部路由协议互操作, 以及建立邻居连接等内容。

《TCP/IP 路由技术 (第2卷)(英文版)(精)》为读者全面理解BGP-4 (边界网关协议版本4)、多播路由、NAT (网络地址转换)、IPv6, 以及有效管理路由器等提供了各种翔实的专业知识。

Jeff Doyle丰富的实践经验, 易于阅读的写作风格及内容全面的论述, 使得《TCP/IP 路由技术 (第2卷)(英文版)(精)》成为所有网络专家的案头宝典。

《TCP/IP 路由技术 (第2卷)(英文版)(精)》大大扩展了第一卷的主题内容: 网络增长所带来的可扩展性和管理性要求。

第二卷从第一卷的内部网关协议扩展到了自治系统间的路由协议, 以及包括多播和IPv6在内的许多特殊路由问题。

并且沿用了在第一卷中所采取的有效信息组织结构, 即在讨论完主题基础知识之后。

辅之以一系列能充分展现现实网络世界中各种概念的配置案例。

并通过各种经过验证的故障检测与排除方法来解决网络中可能出现的各种问题。

《TCP/IP 路由技术 (第2卷)(英文版)(精)》不但可以帮助广大读者在自己的名字之后获得极具价值的CCIE号。

而且还能帮助大家掌握现实网络中所需的大量专家级网络知识和技巧。

无论您是在准备CCIE认证考试, 还是在准备CCIE再认证考试, 或是在寻求有关高级路由问题的专家建议。

<<TCP/IP 路由技术>>

版权说明

本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问:<http://www.tushu007.com>