

<<TCP/IP路由技术（第一卷）>>

图书基本信息

书名：<<TCP/IP路由技术（第一卷）>>

13位ISBN编号：9787115117908

10位ISBN编号：711511790X

出版时间：2003-10-1

出版时间：人民邮电出版社

作者：Jeff Doyle

页数：1013

字数：1433000

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（第一卷）>>

内容概要

本书是第一本详细而又完整地介绍互联网内部网关路由选择协议（IGP协议）的专业书籍，堪称有关IGP协议方面不可多得的经典之作。

本书共分三个部分。

第一部分主要介绍了网络和路由选择的基本知识，对TCP/IP协议和静态、动态路由选择技术作了一个整体的回顾。

第二部分是本书的精华，这一部分详细深入地讲述了各种常用的内部网关路由选择协议，如静态路由、RIP、RIPv2、IGRP、EIGRP、OSPF、ISIS等，每一章除了对该协议的实现机制和参数详尽阐述，使读者对协议的实现原理有一个清晰的理解外，还通过在实际网络环境中的实例，详细地论述了该协议在Cisco路由器上的配置和故障处理方法，使读者获取大量解决实际问题的专业技能。

第三部分介绍了如缺省路由、路由过滤等多种有效的路由控制工具，用来创建和管理多个IP路由选择协议的协调工作。

本书的读者不仅是那些需要准备通过CCIE考试的考生，也是任何需要完整理解TCP/IP内部路由选择协议的网络设计和工程人员。

本书中对协议细节的讲解和对网络实例的探讨相信会让读者获益非浅。

<<TCP/IP路由技术（第一卷）>>

书籍目录

Foreword 1Part I Routing Basics 3Chapter 1 Basic Concepts: Internetworks, Routers, and Addresses 4Bicycles with Motors 6Data Link Addresses 7Repeaters and Bridges 11Routers 18Network Addresses 22Looking Ahead 25Recommended Reading 25Review Questions 26Chapter 2 TCP/IP Review 28The TCP/IP Protocol Layers 29The IP Packet Header 32IP Addresses 40The First Octet Rule 45Address Masks 48Subnets and Subnet Masks 51Designing Subnets 55Breaking the Octet Boundary 57Troubleshooting a Subnet Mask 62ARP 63Proxy ARP 69Gratuitous ARP 72Reverse ARP 72ICMP 73The Host-to-Host Layer 78TCP 78UDP 83Looking Ahead 84Summary Table: Chapter 2 Command Review 85Recommended Reading 85Review Questions 86Configuration Exercises 87Troubleshooting Exercises 88Chapter 3 Static Routing 90The Route Table 92Configuring Static Routes 97Case Study: Simple Static Routes 97Case Study: Summary Routes 101Case Study: Alternative Routes 103Case Study: Floating Static Routes 105Case Study: Load Sharing 109Per Destination Load Sharing and Fast Switching 110Per Packet Load Sharing and Process Switching 111Case Study: Recursive Table Lookups 113Troubleshooting Static Routes 114Case Study: Tracing a Failed Route 115Case Study: A Protocol Conflict 121Looking Ahead 126Summary Table: Chapter 3 Command Review 126Review Questions 127Configuration Exercises 128Troubleshooting Exercises 130Chapter 4 Dynamic Routing Protocols 136Routing Protocol Basics 138Path Determination 138Metrics 141Hop Count 142Bandwidth 142Load 143Delay 143Reliability 144Convergence 144Load Balancing 146Distance Vector Routing Protocols 146Common Characteristics 148Periodic Updates 148Neighbors 148Broadcast Updates 148Full Routing Table Updates 149Routing by Route 149Route Invalidation Timers 151Split Horizon 152Counting to Infinity 156Triggered Updates 157Hold-down Timers 158Asynchronous Updates 158Link State Routing Protocols 160Neighbors 161Link State Flooding 162Sequence Numbers 163Aging 172The Link State Database 173The SPF Algorithm 176Areas 181Interior Gateway Protocols 183Static or Dynamic Routing? 185Looking Ahead 186Recommended Reading 186Review Questions 188Part II Interior Routing Protocols 189Chapter 5 Routing Information Protocol (RIP) 190Operation of RIP 192RIP Timers and Stability Features 193RIP Message Format 196Request Message Types 199Classful Routing 200Classful Routing: Directly Connected Subnets 201Classful Routing: Summarization at Boundary Routers 203Classful Routing: Summary 205Configuring RIP 205Case Study: A Basic RIP Configuration 205Case Study: Passive Interfaces 207Case Study: Configuring Unicast Updates 210Case Study: Discontiguous Subnets 212Case Study: Manipulating RIP Metrics 216Troubleshooting RIP 219Looking Ahead 220Summary Table: Chapter 5 Command Review 220Recommended Reading 220Review Questions 221Configuration Exercises 221Troubleshooting Exercises 223Chapter 6 Interior Gateway Routing Protocol (IGRP) 230Operation of IGRP 232IGRP Timers and Stability Features 235IGRP Metrics 237IGRP Packet Format 245Configuring IGRP 249Case Study: A Basic IGRP Configuration 250Case Study: Unequal-Cost Load Balancing 251Case Study: Setting Maximum Paths 256Case Study: Multiple IGRP Processes 257Troubleshooting IGRP 260Case Study: Unequal-Cost Load Balancing, Again 261Case Study: A Segmented Network 263Looking Ahead 266Summary Table: Chapter 6 Command Review 267Recommended Reading 268Review Questions 268Configuration Exercises 269Troubleshooting Exercises 273Chapter 7 Routing Information Protocol Version 2 280Operation of RIPv2 282RIPv2 Message Format 282Compatibility with RIPv1 286Classless Route Lookups 287Classless Routing Protocols 287Variable-Length Subnet Masking 288Authentication 292Configuring RIPv2 296Case Study: A Basic RIPv2 Configuration 297Case Study: Compatibility with RIPv1 297Case Study: Using VLSM 300Case Study: Discontiguous Subnets and Classless Routing 303Case Study: Authentication 306Troubleshooting RIPv2 309Case Study: Misconfigured VLSM 310Looking Ahead 317Summary Table: Chapter 7 Command Review 317Recommended Reading 318Review Questions 318Configuration Exercises 319Troubleshooting Exercises 321Chapter 8 Enhanced Interior Gateway Routing Protocol (EIGRP) 326Operation of EIGRP 329Protocol-Dependent Modules 330Reliable Transport Protocol 331Neighbor Discovery/Recovery 333The Diffusing Update Algorithm 335DUAL: Preliminary Concepts 335The DUAL Finite State Machine 345Diffusing Computation: Example 1 349Diffusing Computation: Example 2 354EIGRP Packet Formats 363The EIGRP

<<TCP/IP路由技术（第一卷）>>

Packet Header 363General TLV Fields 365IP-Specific TLV Fields 366Address Aggregation 371Configuring EIGRP
 376Case Study: A Basic EIGRP Configuration 377Case Study: Redistribution with IGRP 379Case Study: Disabling
 Automatic Summarization 383Case Study: Address Aggregation 384Authentication 385Troubleshooting EIGRP
 387Case Study: A Missing Neighbor 388Stuck-in-Active Neighbors 394Looking Ahead 399Summary Table:
 Chapter 8 Command review 399Review Questions 401Configuration Exercises 402Troubleshooting Exercises
 404Chapter 9 Open Shortest Path First 408Operation of OSPF 410Neighbors and Adjacencies 412The Hello
 Protocol 413Network Types 415Designated Routers and Backup Designated Routers 418OSPF Interfaces
 423OSPF Neighbors 430Flooding 450Areas 457Router Types 460Partitioned Areas 462Virtual Links 463
 State Database 466LSA Types 470Stub Areas 479The Route Table 485Destination Types 486Path Types 488
 Table Lookups 490Authentication 491OSPF over Demand Circuits 491OSPF Packet Formats 493The Packet
 Header 495The Hello Packet 498The Database Description Packet 499The Link State Request Packet 501The Li
 State Update Packet 502The Link State Acknowledgment Packet 503OSPF LSA Formats 504The LSA Header
 504The Router LSA 506The Network LSA 509The Network and ASBR Summary LSAs 510The Autonomous
 System External LSA 512The NSSA External LSA 513The Options Field 515Configuring OSPF 516Case Study:
 Basic OSPF Configuration 516Case Study: Setting Router IDs with LoopbackInterfaces 520Case Study: Domain
 Name Service Lookups 525Case Study: OSPF and Secondary Addresses 526Case Study: Stub Areas 531Case Study:
 Totally Stubby Areas 536Case Study: Not-So-Stubby Areas 537Case Study: Address Summarization 545Case
 Study: Authentication 550Case Study: Virtual Links 553Case Study: OSPF on NBMA Networks 555Case Study:
 OSPF over Demand Circuits 565Troubleshooting OSPF 567Case Study: An Isolated Area 572Case Study:
 Misconfigured Summarization 577Looking Ahead 581Summary Table: Chapter 9 Command Review
 581Recommended Reading 583Review Questions 584Configuration Exercises 585Troubleshooting Exercises
 588Chapter 10 Integrated IS-IS 592Operation of Integrated IS-IS 595IS-IS Areas 597Network Entity Titles 600
 Functional Organization 603Subnetwork Dependent Functions 604Subnetwork Independent Functions 610IS-IS
 PDU Formats 621CLV Fields 624The IS-IS Hello PDU Format 627The IS-IS Link State PDU Format 636The IS
 Sequence Numbers PDU Format 646Configuring Integrated IS-IS 647Case Study: A Basic Integrated
 IS-ISConfiguration 650Case Study: Changing the Router Types 655Case Study: An Area Migration 660Case Study:
 Route Summarization 664Case Study: Authentication 668Troubleshooting Integrated IS-IS 671Troubleshooting
 IS-IS Adjacencies 672Troubleshooting the IS-IS Link State Database 673Case Study: Integrated IS-IS on NBMA
 Networks 678Looking Ahead 684Summary Table: Chapter 10 Command Review 685Review Questions
 686Configuration Exercises 688Troubleshooting Exercises 690Part III Route Control and
 Interoperability 692Chapter 11 Route Redistribution 694Principles of Redistribution 698Metrics 698Administrat
 Distances 699Redistributing from Classless to Classful Protocols 707Configuring Redistribution 712Case Study:
 Redistributing IGRP and RIP 715Case Study: Redistributing EIGRP and OSPF 717Case Study: Redistribution and
 RouteSummarization 722Case Study: Redistributing IS-IS and RIP 730Case Study: Redistributing Static Routes
 733Looking Ahead 737Summary Table: Chapter 11 Command Review 738Review Questions 738Configuration
 Exercises 739Troubleshooting Exercises 740Chapter 12 Default Routes and On-Demand Routing
 742Fundamentals of Default Routes 744Fundamentals of On-Demand Routing 746Configuring Default Routes
 and ODR 750Case Study: Static Default Routes 751Case Study: The Default-Network Command 755Case Study:
 The Default-Information Originate Command 758Case Study: Configuring On-Demand Routing 763Looking
 Ahead 764Summary Table: Chapter 12 Command Review 765Review Questions 765Chapter 13 Route Filtering
 768Configuring Route Filters 771Case Study: Filtering Specific Routes 772Case Study: Route Filtering and
 Redistribution 776Case Study: A Protocol Migration 780Case Study: Multiple Redistribution Points 787Case Study:
 Using Distances to Set Router Preferences 794Looking Ahead 797Summary Table: Chapter 13 Command
 Review 797Configuration Exercises 798Troubleshooting Exercises 801Chapter 14 Route Maps 804Basic Uses of
 Route Maps 805Configuring Route Maps 809Case Study: Policy Routing 812Case Study: Policy Routing and
 Quality of Service Routing 820Case Study: Route Maps and Redistribution 824Case Study: Route Tagging
 829Looking Ahead 836Summary Table: Chapter 14 Command Review 837Review Questions 839Configuration

<<TCP/IP路由技术（第一卷）>>

Exercises 839 Troubleshooting Exercises 841 Part IV Appendixes 842 Appendix A Tutorial: Working with Binary and Hex 844 Working with Binary Numbers 847 Working with Hexadecimal Numbers 849 Appendix B Tutorial: Access Lists 852 Access List Basics 854 Implicit Deny Any 856 Sequentiality 856 Access List Types 857 Editing Access Lists 861 Standard IP Access Lists 862 Extended IP Access Lists 865 TCP Access Lists 869 UDP Access Lists 870 Access Lists 871 Calling the Access List 872 Keyword Alternatives 875 Named Access Lists 876 Filter Placement Considerations 877 Access List Monitoring and Accounting 880 Appendix C CCIE Preparation Tips 882 Laying the Foundations 885 Hands-On Experience 886 Intensifying the Study 887 The Final Six Months 888 Exam Day 889 Appendix D Answers to Review Questions 892 Chapter 1 893 Chapter 2 896 Chapter 3 900 Chapter 4 902 Chapter 5 905 Chapter 6 906 Chapter 7 907 Chapter 8 908 Chapter 9 911 Chapter 10 914 Chapter 11 917 Chapter 12 917 Chapter 14 918 Appendix E Solutions to Configuration Problems 920 Chapter 2 921 Chapter 3 931 Chapter 6 935 Chapter 6 938 Chapter 7 939 Chapter 8 942 Chapter 9 943 Chapter 10 948 Chapter 11 958 Chapter 13 962 Appendix F Solutions to Troubleshooting Exercises 966 Chapter 2 967 Chapter 3 968 Chapter 5 968 Chapter 7 970 Chapter 7 970 Chapter 8 970 Chapter 9 971 Chapter 10 971 Chapter 11 972 Chapter 13 972 Chapter 14 974

<<TCP/IP路由技术（第一卷）>>

媒体关注与评论

本书特色： · 通过贴近实践的实例描述学习IP内部路由选择协议； · 在CISCO路由器上通过实际案例来探讨IP路由的配置和故障排除； · 通过大量实际应用的综合复习题、配置练习和故障排除练习来测试和验证读者对路由选择协议的掌握程度； · 掌握TCP/IP协议的要点，进一步充实读者对CCIE考试的准备。

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>