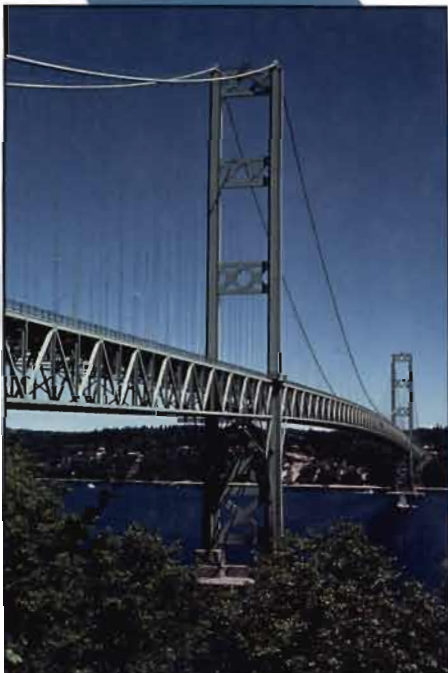


Interconnections Second Edition

Bridges, Routers, Switches,
and Internetworking Protocols

Radia Perlman



ADDISON-WESLEY PROFESSIONAL COMPUTING SERIES

Interconnections, Second Edition

Bridges, Routers, Switches, and Internetworking Protocols

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Contents

Preface	xi
Roadmap to the Book	xii
Acknowledgments	xii
Chapter 1 Essential Networking Concepts	1
1.1 Layers	1
1.2 Service Models	7
1.3 Important Properties of a Network	9
1.4 Reliable Data Transfer Protocols	12
Chapter 2 Data Link Layer Issues	19
2.1 Generic LANs	19
2.2 IEEE 802 LANs	22
2.3 Names, Addresses, Routes	23
2.4 LAN Addresses	25
2.5 Multicast versus Unicast Addresses	27
2.6 The Broadcast Address	28
2.7 Multiplexing Field	29
2.8 Bit Order	32
2.9 Logical Link Control	34
2.10 Issues in 802.3	35
2.11 Issues in 802.5	38
2.12 Packet Bursts	40
2.13 Reasons for Bridges	40
2.14 Point-to-Point Links	41
Chapter 3 Transparent Bridges	45
3.1 The No-Frills Bridge	45
3.2 The Learning Bridge	47
3.3 Spanning Tree Algorithm	58
3.4 Spanning Tree Algorithm Refinements	63

- 3.5 Bridge Message Formats 77
- 3.6 Other Bridge Issues 79
- 3.7 Remote Bridges 87

Chapter 4 Source Routing Bridges 95

- 4.1 Pure Source Routing 96
- 4.2 SR-TB Bridges 104
- 4.3 SRT Bridges 108
- 4.4 End-system Algorithms 109
- 4.5 Source Routing versus Transparent Bridging 116
- 4.6 Ideas for Improving Source Route Bridging 119

Chapter 5 Hubs, Switches, Virtual LANs, and Fast Ethernet 127

- 5.1 Hubs 127
- 5.2 Faster LANs 132
- 5.3 Virtual LANs (VLANs) 134

Chapter 6 Network Interface: Service Models 145

- 6.1 What Is the Network Layer? 145
- 6.2 Network Service Types 146

Chapter 7 Connection-oriented Nets: X.25 and ATM 153

- 7.1 Generic Connection-oriented Network 153
- 7.2 X.25: Reliable Connection-oriented Service 155
- 7.3 Implementing X.25 Inside the Net 167
- 7.4 Asynchronous Transfer Mode 168

Chapter 8 Generic Connectionless Service 179

- 8.1 Data Transfer 179
- 8.2 Addresses 180
- 8.3 Hop Count 180
- 8.4 Service Class Information 181
- 8.5 Network Feedback 183
- 8.6 Fragmentation and Reassembly 183
- 8.7 Maximum Packet Size Discovery 185

Chapter 9 Network Layer Addresses 189

- 9.1 Hierarchical Addresses with Fixed Boundaries 190
- 9.2 Hierarchical Addresses with Flexible Boundaries 192
- 9.3 Owning versus Renting Addresses 193
- 9.4 Types of Addresses 194
- 9.5 IP 194
- 9.6 IPX 199

- 9.7 IPX+ 203
- 9.8 IPv6 204
- 9.9 CLNP Network Layer Addresses 211
- 9.10 AppleTalk Network Layer Addresses 215
- 9.11 DECnet Phases III and IV 216
- 9.12 NAT/NAPT 218

Chapter 10 Connectionless Data Packet Formats 221

- 10.1 Pieces of a Connectionless Network Layer 221
- 10.2 Data Packets 222
- 10.3 Summary of Packet Formats for Easy Reference 222
- 10.4 Technical Issues and Comparisons in Data Packet Formats 230
- 10.5 Source Routing 250
- 10.6 The Great IPX Frame Format Mystery 253
- 10.7 Error Reports and Other Network Feedback to the Endnode 256

Chapter 11 Neighbor Greeting and Autoconfiguration 265

- 11.1 Endnodes Attached via Point-to-Point Links 266
- 11.2 Endnodes Attached via LANs 267
- 11.3 Endnodes Attached via Nonbroadcast Multiaccess Media 284
- 11.4 Finding Things 293

Chapter 12 Routing Algorithm Concepts 299

- 12.1 Distance Vector Routing 299
- 12.2 Link State Routing 307
- 12.3 Comparison of Link State and Distance Vector Routing 320
- 12.4 Load Splitting 325
- 12.5 Link Costs 326
- 12.6 Migrating Routing Algorithms 328
- 12.7 LANs 331
- 12.8 Types of Service 334
- 12.9 Partition Repair: Level 1 Subnetwork Partition 341

Chapter 13 Fast Packet Forwarding 347

- 13.1 Using an Additional Header 347
- 13.2 Address Prefix Matching 348
- 13.3 Longest Prefix Match with Trie 350
- 13.4 Binary Search 361

Chapter 14 Specific Routing Protocols 367

- 14.1 A Brief History of Intradomain Routing Protocols 367
- 14.2 RIP 369
- 14.3 RTMP, IPX-RIP, and DECnet 372

14.4	IS-IS, OSPF, NLSP, and PNNI	373
14.5	Interdomain Routing Protocols	425
Chapter 15	WAN Multicast	449
15.1	Introduction	449
15.2	Multicast in IP	453
Chapter 16	Sabotage-proof Routing	479
16.1	The Problem	480
16.2	All You Need to Know about Cryptography	480
16.3	Overview of the Approach	482
16.4	Detailed Description of the Approach	484
16.5	Summary	491
16.6	For Further Reading	491
Chapter 17	To Route, Bridge, or Switch: Is That the Question?	493
17.1	Switches	493
17.2	Bridges versus Routers	493
17.3	Extensions to Bridges	496
17.4	Extensions to Routers	498
Chapter 18	Protocol Design Folklore	503
18.1	Simplicity versus Flexibility versus Optimality	503
18.2	Knowing the Problem You're Trying to Solve	505
18.3	Overhead and Scaling	506
18.4	Operation Above Capacity	506
18.5	Compact IDs versus Object Identifiers	507
18.6	Optimizing for the Most Common or Important Case	507
18.7	Forward Compatibility	508
18.8	Migration: Routing Algorithms and Addressing	513
18.9	Parameters	514
18.10	Making Multiprotocol Operation Possible	517
18.11	Running over Layer 3 versus Layer 2	518
18.12	Robustness	519
18.13	Determinism versus Stability	520
18.14	Performance for Correctness	521
18.15	In Closing	521
Glossary		523
Index		533

Interconnections, Second Edition

Radia Perlman's *Interconnections* is recognized as a leading text on networking theory and practice. It provides authoritative and comprehensive information on general networking concepts, routing algorithms and protocols, addressing, and the mechanics of bridges, routers, switches, and hubs. This **Second Edition** is expanded and updated to cover the newest developments in the field, including advances in switching and bridge technology, VLANs, Fast Ethernet, DHCP, ATM, and IPv6. Additional new topics include IPX, AppleTalk, and DECnet. You will gain a deeper understanding of the range of solutions possible and find valuable information on protocols for which documentation is not readily available elsewhere.

Written by the inventor of many of the algorithms that make switching and routing robust and efficient, *Interconnections, Second Edition* offers an expert's insight into how and why networks operate as they do. Perlman describes all of the major networking algorithms and protocols in use today in clear and concise terms, while exploring the engineering trade-offs that the different approaches represent.

The book contains extensive coverage of such topics as:


- The spanning tree algorithm
- The differences between bridges, routers, and switches
- Virtual LANs (VLANs) and Fast Ethernet
- Addressing and packet formats for IP, IPv6, IPX, CLNP, AppleTalk, and DECnet
- Autoconfiguration of addresses; strategies in various protocol suites
- Routing protocols, including RIP, IS-IS, OSPF, PNNI, NLSP, and BGP
- Layer 3 multicast protocols, including IGMP, DVMRP, MOSPF, CBT, PIM, BGMP, Simple Multicast, and Express
- Sabotage-proof routing
- Protocol design folklore

Radia Perlman's work has had a profound impact on the field of networking. She was featured in the 25th anniversary edition of *Data Communications* magazine as one of the 25 people whose work has most influenced the industry. She is the creator of the spanning tree algorithm upon which bridges (switches) are based, and the algorithms that allow robust and efficient link state routing, upon which all modern link state routing protocols (such as IS-IS, OSPF, and PNNI) are based. Radia designed IS-IS, Simple Multicast, and sabotage-proof routing. She is also co-author of *Network Security: Private Communication in a Public World*. Both of her books were listed in the top 10 most useful networking reference books in the March, 1998 issue of *Network Magazine*. She is currently a Distinguished Engineer at Sun Microsystems, Inc. She holds about 50 patents and a Ph.D. from M.I.T.

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