

Table of Contents:

Chapter 1. IPv6 Versus IPv4	page 4
Section 1.1. The History of IPv6	
Section 1.2. Overview of Functionality	
Section 1.3. Transition Aspects	
Section 1.4. IPv6 Alive	
Chapter 2. The Structure of the IPv6 Protocol	page 11
Section 2.1. General Header Structure	
Section 2.2. The Fields in the IPv6 Header	
Section 2.3. Extension Headers	
Chapter 3. IPv6 Addressing	page 24
Section 3.1. Address Types	
Section 3.2. Address Notation	
Section 3.3. Prefix Notation	
Section 3.4. Format Prefixes	
Section 3.5. Address Privacy	
Section 3.6. Aggregatable Global Unicast Address	
Section 3.7. Anycast Address	
Section 3.8. Multicast Address	
Section 3.9. Required Addresses	
Chapter 4. ICMPv6	page 38
Section 4.1. General Message Format	
Section 4.2. ICMP Error Messages	
Section 4.3. ICMP Informational Messages	
Section 4.4. Processing Rules	
Section 4.5. The ICMPv6 Header in a Trace File	
Section 4.6. Neighbor Discovery	
Section 4.7. Autoconfiguration	
Section 4.8. Path MTU Discovery	
Section 4.9. Multicast Group Management	
Chapter 5. Security in IPv6	page 61
Section 5.1. Types of Threats	
Section 5.2. Basic Security Requirements and Techniques	
Section 5.3. Security in the Current Internet Environment	
Section 5.4. Current Solutions	
Section 5.5. Open Security Issues in the Current Internet	
Section 5.6. The IPSEC Framework	
Section 5.7. IPv6 Security Elements	
Section 5.8. Security Association Negotiation and Key Management	
Section 5.9. Interworking of IPv6 Security with Other Services	
Section 5.10. Open Issues in IPv6 Security	
Chapter 6. Quality of Service in IPv6	page 80
Section 6.1. QoS Paradigms	
Section 6.2. Quality of Service in IPv6 Protocols	
Section 6.3. QoS Architectures	
Section 6.4. Mapping IP QoS to Underlying Transmission Networks	
Section 6.5. Further Issues in IP QoS	

Chapter 7. Networking Aspects	page 89
Section 7.1. Layer 2 Support for IPv6	
Section 7.2. Multicasting	
Section 7.3. Mobile IP	
Section 7.4. Network Designs	
Chapter 8. Routing Protocols	page 100
Section 8.1. RIPng	
Section 8.2. OSPF for IPv6 (OSPFv3)	
Section 8.3. BGP Extensions for IPv6	
Section 8.4. Other Routing Protocols for IPv6	
Chapter 9. Upper-Layer Protocols	page 157
Section 9.1. UDP/TCP	
Section 9.2. DHCP	
Section 9.3. DNS	
Section 9.4. SLP	
Section 9.5. FTP	
Section 9.6. Telnet	
Section 9.7. Web Servers	
Chapter 10. Interoperability	page 169
Section 10.1. Dual-Stack Techniques	
Section 10.2. Tunneling Techniques	
Section 10.3. Network Address and Protocol Translation	
Section 10.4. Comparison	
Section 10.5. Vendor Support	
Chapter 11. Get Your Hands Dirty	page 190
Section 11.1. Sun Solaris	
Section 11.2. Linux	
Section 11.3. Microsoft	
Section 11.4. Applications	
Section 11.5. Cisco Router	
Section 11.6. Description of the Tests	
Section 11.7. Vendor Support	
Appendix A. RFCs	page 208
Section A.1. Standards	
Appendix B. IPv6 Resources	page 212
Section B.1. Ethertype Field	
Section B.2. Next Header Field Values (Chapter 2)	
Section B.3. Reserved Anycast IDs (Chapter 3, RFC 2526)	
Section B.4. Values for the Multicast Scope Field (Chapter 3, RFC 2373)	
Section B.5. Well-Known Multicast Group Addresses (Chapter 3, RFC 2375)	
Section B.6. ICMPv6 Message Types and Code Values (Chapter 4, RFC 2463)	
Section B.7. Multicast Group Addresses and Token Ring Functional Addresses (Chap 7)	
Section B.8. Multicast Addresses for SLP over IPv6 (Chapter 9)	
Section B.9. Protocol Translation (Chapter 10, RFC 2765)	
Section B.10. Current Prefix Allocations	
Section B.11. Vendor Support	
Appendix C. Recommended Reading	page 230