

methods for improving WLAN performance. Fulfilling these needs, *Improving the Performance of Wireless LANs: A Practical Guide* provides both theoretical background and empirical results for the optimum planning and deployment of high performance WLAN systems in different residential and commercial buildings. Useful to students, faculties, researchers, engineers, and network developers, this must-have book not only explains the fundamentals of WLAN systems, including WLAN features and standards, but also: Supplies strategic guidelines for WLAN system design, modeling, and performance evaluation Includes radio propagation and site measurements as well as simulations for various network design scenarios Discusses environmental effects on WLAN performance, protocol redesign for routing and MAC, and traffic distribution Contains numerous illustrations and examples, plus chapter summaries, review questions, reading lists, mini-projects, an extensive glossary, and a list of acronyms Examines emerging and future network technologies, such as next generation Wi-Fi (802.11ac), very high throughput Wi-Fi (802.11ad), wireless mesh networking (802.11s), emergency QoS (802.11u), and vehicle-to-vehicle communications (802.11p) *Improving the Performance of Wireless LANs: A Practical Guide* makes the teaching, learning, and researching of advanced wireless network design and performance a more active process by using practical tools and exercises to add life to this highly technical subject.

Computer Networks: A Systems Approach, Fifth Edition, explores the key principles of computer networking, with examples drawn from the real world of network and protocol design. Using the Internet as the primary example, this best-selling and classic textbook explains various protocols and networking technologies. The systems-oriented approach encourages students to think about how individual network components fit into a larger, complex system of interactions. This book has a completely updated content with expanded coverage of the topics of utmost importance to networking professionals and students, including P2P, wireless, network security, and network applications such as e-mail and the Web, IP telephony and video streaming, and peer-to-peer file sharing. There is now increased focus on application layer issues where innovative and exciting research and design is currently the center of attention. Other topics include network design and architecture; the ways users can connect to a network; the concepts of switching, routing, and internetworking; end-to-end protocols; congestion control and resource allocation; and end-to-end data. Each chapter includes a problem statement, which introduces issues to be examined; shaded sidebars that elaborate on a topic or introduce a related advanced topic; What's Next? discussions that deal with emerging issues in research, the commercial world, or society; and exercises. This book is written for graduate or upper-division undergraduate classes in computer networking. It will also be useful for industry professionals retraining for network-related assignments, as well as for network practitioners seeking to understand the workings of network protocols and the big picture of networking. Completely updated content with expanded coverage of the topics of utmost importance to networking professionals and students, including P2P, wireless, security, and applications Increased focus on application layer issues where innovative and exciting research and design is currently the center of attention Free downloadable network simulation software and lab experiments manual available

This authoritative book provides a thorough understanding of the fundamental concepts of satellite communications (SATCOM) network design and performance assessments. You find discussions on a wide class of SATCOM networks using satellites as core components, as well as coverage key applications in the field. This in-depth resource presents a broad range of critical topics, from geosynchronous Earth orbiting (GEO) satellites and direct broadcast satellite systems, to low Earth orbiting (LEO) satellites, radio standards and protocols. This invaluable reference explains the many specific uses of satellite networks, including small-terminal wireless and mobile communications systems. Moreover, this book presents advanced topics such as satellite RF link analyses, optimum transponder loading, on-board processing, antenna characteristics, protected systems, information assurance, and spread spectrums. You are introduced to current and future SATCOM systems and find details on their performance supportabilities. This cutting-edge book also presents trends in multimedia satellite applications and IP services over satellites.

Data and Computer Communications, 10e, is a two-time winner of the best Computer Science and Engineering textbook of the year award from the Textbook and Academic Authors Association. It is ideal for one/two-semester courses in Computer Networks, Data Communications, and Communications Networks in CS, CIS, and Electrical Engineering departments. This book is also suitable for Product Development personnel, Programmers, Systems Engineers, Network Designers and others involved in the design of data communications and networking products. With a focus on the most current technology and a convenient modular format, this best-selling text offers a clear and comprehensive survey of the entire data and computer communications field. Emphasizing both the fundamental principles as well as the critical role of performance in driving protocol and network design, it explores in detail all the critical technical areas in data communications, wide-area networking, local area networking, and protocol design. This book combines the three dimensions of technology, society and economy to explore the advent of today's cloud ecosystems as successors to older service ecosystems based on networks. Further, it describes the shifting of services to the cloud as a long-term trend that is still progressing rapidly. The book adopts a comprehensive perspective on the key success factors for the technology – compelling business models and ecosystems including private, public and national organizations. The authors explore the evolution of service ecosystems, describe the similarities and differences, and analyze the way they have created and changed industries. Lastly, based on the current status of cloud computing and related technologies like virtualization, the internet of things, fog computing, big data and analytics, cognitive computing and blockchain, the authors provide a revealing outlook on the possibilities of future technologies, the future of the internet, and the potential impacts on business and society.

This timely textbook presents a comprehensive guide to the core topics in cybersecurity, covering issues of security that extend beyond traditional computer networks to the ubiquitous mobile communications and online social networks that have become part of our daily lives. In the context of our growing dependence on an ever-changing digital

ecosystem, this book stresses the importance of security awareness, whether in our homes, our businesses, or our public spaces. This fully updated new edition features new material on the security issues raised by blockchain technology, and its use in logistics, digital ledgers, payments systems, and digital contracts. Topics and features: Explores the full range of security risks and vulnerabilities in all connected digital systems Inspires debate over future developments and improvements necessary to enhance the security of personal, public, and private enterprise systems Raises thought-provoking questions regarding legislative, legal, social, technical, and ethical challenges, such as the tension between privacy and security Describes the fundamentals of traditional computer network security, and common threats to security Reviews the current landscape of tools, algorithms, and professional best practices in use to maintain security of digital systems Discusses the security issues introduced by the latest generation of network technologies, including mobile systems, cloud computing, and blockchain Presents exercises of varying levels of difficulty at the end of each chapter, and concludes with a diverse selection of practical projects Offers supplementary material for students and instructors at an associated website, including slides, additional projects, and syllabus suggestions This important textbook/reference is an invaluable resource for students of computer science, engineering, and information management, as well as for practitioners working in data- and information-intensive industries.

This best-selling and classic book teaches you the key principles of computer networks with examples drawn from the real world of network and protocol design. Using the Internet as the primary example, the authors explain various protocols and networking technologies. Their systems-oriented approach encourages you to think about how individual network components fit into a larger, complex system of interactions. Whatever your perspective, whether it be that of an application developer, network administrator, or a designer of network equipment or protocols, you will come away with a "big picture" understanding of how modern networks and their applications are built. *Completely updated content with expanded coverage of the topics of utmost importance to networking professionals and students, including P2P, wireless, security, and applications. *Increased focus on application layer issues where innovative and exciting research and design is currently the center of attention. *Free downloadable network simulation software and lab experiments manual available.

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Your Complete Certification Solution Covers the critical information you need to know to score higher on your Network+ exam: Implement proven best practices for managing networks efficiently and reliably Thoroughly understand network hardware components, devices, cabling, and connectors Systematically review TCP/IP, related network protocols, and the OSI model Manage network operating systems and clients Identify network vulnerabilities and configure network security to address them Use security tools such as cryptography and antivirus software Provide reliable, secure Internet access, WAN access, and VLAN support Implement disaster recovery plans that protect business continuity Troubleshoot network and Internet connectivity problems Efficiently document the network and provide high-quality user support informit.com/examcram ISBN-13: 978-0-7897-3795-3 ISBN-10: 0-7897-3795-7

Networking Explained 2e offers a comprehensive overview of computer networking, with new chapters and sections to cover the latest developments in the field, including voice and data wireless networking, multimedia networking, and network convergence. Gallo and Hancock provide a sophisticated introduction to their subject in a clear, readable format. These two top networking experts answer hundreds of questions about hardware, software, standards, and future directions in network technology. Wireless networks Convergence of voice and data Multimedia networking

Knowing how to install, configure, and troubleshoot a computer network is a highly marketable and exciting skill. This book first introduces the fundamental building blocks that form a modern network, such as protocols, topologies, hardware, and network operating systems. It then provides in-depth coverage of the most important concepts in contemporary networking, such as TCP/IP, Ethernet, wireless transmission, and security. After reading the book and completing the end-of-chapter exercises, you will be prepared to select the best network design, hardware, and software for your environment. You will also have the skills to build a network from scratch and maintain, upgrade, and troubleshoot an existing network. Finally, you will be well prepared to pass CompTIA's (the Computing Technology Industry Association's) Network+ certification exam. This book explains concepts logically and in a clear, approachable style. In addition, concepts are reinforced by real-world examples of networking issues from a professional's standpoint. Each chapter opens with an On the Job story from a network engineer. These real-world examples, along with Hands-on Projects and Case Projects in each chapter, make this book a practical learning tool. The numerous tables and illustrations, along with the glossaries, appendices, and study questions make the book a valuable reference for any networking professional Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Thoroughly updated to reflect the CompTIA Network+ N10-007 exam, Networking Essentials, Fifth Edition is a practical, up-to-date, and hands-on guide to the basics of networking. Written from the viewpoint of a working network administrator, it requires absolutely no experience with either network concepts or day-to-day network management. Networking Essentials, Fifth Edition guides readers from an entry-level knowledge in computer networks to advanced concepts in Ethernet and TCP/IP networks; routing protocols and router configuration; local, campus, and wide area network configuration; network security; wireless networking; optical networks; Voice over IP; the network server; and Linux networking. This edition contains additional coverage of switch security, troubleshooting IP networks, authorization and access control, best practices for disaster recovery, network infrastructure configuration and management, data traffic network analysis, network security, and VoIP. It also covers approximately 250 new terms now addressed by CompTIA's N10-007 exam. Clear goals are outlined for each chapter, and every concept is introduced in easy-to-understand language that explains how and why networking technologies are used. Each chapter is packed with real-world examples and practical exercises that reinforce all concepts and guide you through using them to configure, analyze, and fix networks. KEY PEDAGOGICAL FEATURES NET-CHALLENGE SIMULATION SOFTWARE provides hands-on experience with entering router and switch commands, setting up functions, and configuring interfaces and protocols WIRESHARK NETWORK PROTOCOL ANALYZER presents techniques and examples of data traffic analysis throughout PROVEN TOOLS FOR MORE EFFECTIVE LEARNING AND NETWORK+ PREP, including chapter outlines, summaries, and Network+ objectives WORKING EXAMPLES IN EVERY CHAPTER to reinforce key concepts and promote mastery KEY TERM DEFINITIONS, LISTINGS, AND EXTENSIVE GLOSSARY to help you master the language of networking QUESTIONS, PROBLEMS, AND CRITICAL THINKING QUESTIONS to help you deepen your understanding

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A straightforward overview with minimum technical descriptions of the underlying networking principles, standards, applications and uses of the Internet. Understanding the Internet explains the underlying

networking concepts, the protocols and standards which comprise the Internet, Internet trends and applications, the mobile Internet, security and the hidden Web. The Internet and World Wide Web are dramatically changing the world we live in and this book provides a holistic view of the Internet so that practitioners and users can more fully understand the concepts involved. Written by a highly knowledgeable and well-respected practitioner in the field Draws on the author's wide-ranging practical experience of developing web and mobile web applications and indeed teaching Internet technologies at a university for many years Provides insight into how the Internet is put together and the novel applications which are currently residing on it
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Intended primarily as a textbook for the students of computer science and engineering, electronics and communication engineering, master of computer applications (MCA), and those offering IT courses, the book provides a comprehensive coverage of the subject. Basic elements of communication such as data, signal and channel alongwith their characteristics such as bandwidth, bit internal and bit rate have been explained. Contents related to guided and unguided transmission media, Bluetooth wireless technology, developed for Personal Area Network (PAN) and issues related to routing covering popular routing algorithms namely RIP, OSPF and BGP, have been introduced in the book. Various aspects of data link control alongwith their application in HDLC network and techniques such as encoding, multiplexing and encryption/decryption are presented in detail. Characteristics and implementation of PSTN, SONET, ATM, LAN, PACKET RADIO network, Cellular telephone network and Satellite network have also been explained. Different aspects of IEEE 802.11 WLAN and congestion control protocols have also been discussed in the book. Key Features • Each chapter is divided into section and subsection to provide flexibility in curriculum design. • The text contains numerous solved examples, and illustrations to bring clarity to the subject and enhance its understanding. • Review questions given at the end of each chapter, are meant to enable the teacher to test student's grasping of the subject.

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Computer Networks, 5/e is appropriate for Computer Networking or Introduction to Networking courses at both the undergraduate and graduate level in Computer Science, Electrical Engineering, CIS, MIS, and Business Departments. Tanenbaum takes a structured approach to explaining how networks work from the inside out. He starts with an explanation of the physical layer of networking, computer hardware and transmission systems; then works his way up to network applications. Tanenbaum's in-depth application coverage includes email; the domain name system; the World Wide Web (both client- and server-side); and multimedia (including voice over IP, Internet radio video on demand, video conferencing, and streaming media. Each chapter follows a consistent approach: Tanenbaum presents key principles, then illustrates them utilizing real-world example networks that run through the entire book--the Internet, and wireless networks, including Wireless LANs, broadband wireless and Bluetooth. The Fifth Edition includes a chapter devoted exclusively to network security. The textbook is supplemented by a Solutions Manual, as well as a Website containing PowerPoint slides, art in various forms, and other tools for instruction, including a protocol simulator whereby students can develop and test their own network protocols.

Written by a best-selling author and leading computer networking authority, this title builds a comprehensive picture of the technologies behind Internet applications.

The research focus of Rahamatullah Khondoker is on Future Internet Architectures, Network Security, Software-Defined Networking, and Network Function Virtualization. In his PhD thesis, the author tackles challenges of today's layered network architecture (such as TCP/IP protocol stack) which is inflexible. He proposes that the evolution of the network can be achieved by first, decoupling applications from the networks and second, selecting the best network or protocol automatically based on the applications' requirements. With the provided language, applications are able to express their requirements, and networks expose their capabilities such that the most appropriate network and protocol are selected automatically.

Thoroughly updated to reflect the CompTIA Network+ N10-007 exam, Networking Essentials, Fifth Edition is a practical, up-to-date, and hands-on guide to the basics of networking. Written from the viewpoint of a working network administrator, it requires absolutely no experience with either network concepts or day-to-day network management. Networking Essentials, Fifth Edition guides readers from an entry-level knowledge in computer networks to advanced concepts in Ethernet and TCP/IP networks; routing protocols and router configuration; local, campus, and wide area network configuration; network security; wireless networking; optical networks; Voice over IP; the network server; and Linux networking. This edition contains additional coverage of switch security, troubleshooting IP networks, authorization and access control, best practices for disaster recovery, network infrastructure configuration and management, data traffic network analysis, network security, and VoIP. It also covers approximately 250 new terms now addressed by CompTIA's N10-007 exam. Clear goals are outlined for each chapter, and every concept is introduced in easy-to-understand language that explains how and why networking technologies are used. Each chapter is packed with real-world examples and practical exercises that reinforce all concepts and guide you through using them to configure, analyze, and fix networks. KEY PEDAGOGICAL FEATURES NET-CHALLENGE SIMULATION SOFTWARE provides hands-on experience with entering router and switch commands, setting up functions, and configuring interfaces and protocols WIRESHARK NETWORK PROTOCOL ANALYZER presents techniques and examples of data traffic analysis throughout PROVEN TOOLS FOR MORE EFFECTIVE LEARNING AND NETWORK+ PREP, including chapter outlines, summaries, and Network+ objectives WORKING EXAMPLES IN EVERY CHAPTER to reinforce key concepts and promote mastery KEY TERM DEFINITIONS, LISTINGS, AND EXTENSIVE GLOSSARY to help you

master the language of networking QUESTIONS, PROBLEMS, AND CRITICAL THINKING QUESTIONS to help you deepen your understanding. With the advent of the World Wide Web the global Internet has rapidly become the dominant type of computer network. It now enables people around the world to use the Web for E-Commerce and interactive entertainment applications, in addition to e-mail and IP telephony. As a result, the study of computer networking is now synonymous with the study of the Internet and its applications. The 5th edition of this highly successful text has been completely revised to focus entirely on the Internet, and so avoids the necessity of describing protocols and architectures that are no longer relevant. As many Internet applications now involve multiple data types ζ text, images, speech, audio and video ζ the book explains in detail how they are represented. A number of different access networks are now used to gain access to the global Internet. Separate chapters illustrate how each type of access network operates, and this is followed by a detailed account of the architecture and protocols of the Internet itself and the operation of the major application protocols. This body of knowledge is made accessible by extensive use of illustrations and worked examples that make complex systems more understandable at first glance. This makes the book ideal for self-study or classroom use for students in Computer Science or Engineering, as well as being a comprehensive reference for practitioners who require a definitive guide to networking.

This classic reference for students, and anyone who wants to know more about connectivity, has been totally rewritten to reflect the networks of the 1990s and beyond.

This practical text provides all the information and direction beginning school librarians need to develop and manage multiformat collections. • Additional readings of current articles and helpful websites at the end of each chapter • An appendix containing a comprehensive listing of annotated resources • Sample forms for collection development policies and procedures

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Appropriate for Computer Networking or Introduction to Networking courses at both the undergraduate and graduate level in Computer Science, Electrical Engineering, CIS, MIS, and Business Departments. Tanenbaum takes a structured approach to explaining how networks work from the inside out. He starts with an explanation of the physical layer of networking, computer hardware and transmission systems; then works his way up to network applications. Tanenbaum's in-depth application coverage includes email; the domain name system; the World Wide Web (both client- and server-side); and multimedia (including voice over IP, Internet radio video on demand, video conferencing, and streaming media). Each chapter follows a consistent approach: Tanenbaum presents key principles, then illustrates them utilizing real-world example networks that run through the entire book—the Internet, and wireless networks, including Wireless LANs, broadband wireless and Bluetooth. The Fifth Edition includes a chapter devoted exclusively to network security. The textbook is supplemented by a Solutions Manual, as well as a Website containing PowerPoint slides, art in various forms, and other tools for instruction, including a protocol simulator whereby students can develop and test their own network protocols. Networking Labs (Instructor bundle) This set of a dozen labs complements the textbook with hands-on exercises to let students explore the Internet protocols in a real-world setting. All the handouts and traces that students need to complete the exercises are included. The exercises run on Windows, Mac and Linux platforms, and may be used for labs, homeworks, and demonstrations. The protocols that are examined include Ethernet, 802.11, IP, ARP, ICMP, DHCP, UDP, TCP, HTTP, DNS and SSL. The labs also build useful skills by making use of popular networking tools including Wireshark, curl and wget, ping, traceroute, and dig. The instructor version of the labs includes solution handouts and source materials.

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