

Data Communication Networking 2nd Edition By Behrouz

Introduction to Data Networks describes the different types of data networks, how they operate and the services they can provide. Data networks are telecommunications networks that are installed and operated for information exchange between data communication devices such as computers and voice gateways. Although data networks can transfer any type of digital media (voice, data or video), the type of network, services used and optional configurations can dramatically affect the performance of data services. This book provides a functional description of the key data network parts including hubs, routers, bridges and gateways. You will discover the differences between personal area networks (PANs), premises distribution networks (PDNs), local area networks (LANs), metropolitan area networks (MANs), and wide area networks (WANs). The basic operation of Ethernet is provided along with how Ethernet has evolved and the different types of Ethernet systems that are available today. Discover how data networks are configured and managed using simple network management protocol (SNMP). Learn the basic operation of gateways and firewalls and how firewalls operate to protect networks from the unwanted transmission of information. The operation of different types of data systems and how they operate is explained including Ethernet, Token Ring, FDDI, PON, ATM, Frame Relay, and the Internet. Find out how data networks can be configured to allow many users to share the same data network using virtual private networks. You will learn about the common types of data services such as CBR, ABR, UBR and their typical service costs. Some of the most important topics featured are: Functional parts of data networks Descriptions of hubs, routers, bridges and gateways. The differences between PAN, PDN, LAN, MAN, and WAN Networks How Ethernet and other types of data networks operate How packets are automatically routed in IP networks How gateways and firewalls operate Overviews of Ethernet, Token Ring, FDDI, PON, ATM, Frame Relay and the Internet Introduction to virtual networks (VPNs) Data services including CBR, ABR and UBR

Primarily intended as a text for undergraduate courses in Electronics and Communications Engineering, Computer Science, IT courses, and Computer Applications, this up-to-date and accessible text gives an in-depth analysis of data communications and computer networks in an easy-to-read style. Though a new title, it is a completely revised and fully updated version of the author's earlier book Data Communications. The rapid strides made during the last decade in the fields of data communication and networking, and the close link between these two subjects have prompted the author to add several chapters on computer networks in this text. The book gives a masterly analysis of topics ranging from the principles of data transmission to computer networking applications. It also provides standard protocols, thereby enabling to bridge the gap between theory and practice. What's more, it correlates the network protocols to the concepts, which are explained with the help of numerous examples to facilitate students' understanding of the subject. This well-organized text presents the latest developments in the field and details current topics of interest such as Multicasting, MPLS, IPv6, Gigabit Ethernets, IPsec, SSL, Auto-negotiation, Wireless LANs, Network security, Differentiated services, and ADSL. Besides students, the practicing professionals would find the book to be a valuable resource. The book, in its second edition introduces a full chapter on Quality of Service, highlighting the meaning, parameters and functions required for quality of service. This book is recommended in Kaziranga University, Nagaland, IIT Guwahati, Assam and West Bengal University of Technology (WBUT), West Bengal for B.Tech. Key Features • The book is self-contained and student friendly. • The sequential organization lends flexibility in designing courses on the subject. • Large number of examples, diagrams and tables illustrate the concepts discussed in the text. • Numerous exercises (with answers), a list of acronyms, and references to protocol standards.

This book provides a clear and easy to follow treatment of communications and networking. It is written specifically for undergraduates who have no previous experience in the field. The author takes a step-by-step approach, with many examples and exercises designed to give the reader experience and increase confidence by using and designing communications systems. Written by a lecturer with many years' experience teaching undergraduate programmes, the text takes the reader through the essentials of networking and provides a comprehensive, reliable and thorough treatment of the subject. The book is also accessible for business professionals.

This is a practical introduction to the key computing concepts of networks and communications, suitable for a first year undergraduate or industrial course. It provides the foundational knowledge on which to build a fully developed understanding of modern communications methodologies, techniques and standards. It will also be a useful professional reference companion.; The book begins with a general introduction to data communications and the options commonly open to the system designer. It then provides overviews of the key areas in which design decisions must be made: communication media; interface standards; network architectures; modems and multiplexers; network topologies, switching and access control; local area networks; wide-area networks; performance; software issues; security; and implementation.; As a second edition of an established text the book has been thoroughly revised and improved but retains the strengths of the first edition in its clear and well-illustrated exposition. It includes current developments in standards and architecture including ATM, B-ISDN, SNMP, TCP/IP, and other state-of-the-art features of the computer communications world.; In its first edition the book was an authoritative textbook and personal reference for industry. In this new edition it should be even more essential for all with a need for an accessible modern technical introduction to computer communications and networks. Suitable for a practically orientated computer science course at degree level or for an introductory industrial course.

DATA COMMUNICATIONS AND COMPUTER NETWORKS PHI Learning Pvt. Ltd.

Advances in Delay-Tolerant Networks: Architecture and Enhanced Performance, Second Edition provides an important overview of delay-tolerant networks (DTNs) for researchers in electronics, computer engineering, telecommunications and networking for those in academia and R&D in industrial sectors. Part I reviews the technology involved and the prospects for improving performance, including different types of DTN and their applications, such as satellite and deep-space communications and vehicular communications. Part II focuses on how the technology can be further improved, addressing topics, such as data bundling, opportunistic routing, reliable data streaming, and the potential for rapid selection and dissemination of urgent messages. Opportunistic, delay-tolerant networks address the problem of intermittent connectivity in a network where there are long delays between sending and receiving messages, or there are periods of disconnection. Reviews the different types of DTN and shows how they can be applied in satellite and deep-space communications, vehicular communications (including unmanned aerial), and during large-scale disasters Considers security concerns for DTN and potential for rapid selection and dissemination of urgent messages Reviews the breadth of areas in which DTN is already providing solutions Covers the prospects for DTN's wider adoption and development of standards This book is designed and developed assuming little or no technical background on part of the reader. The book therefore first introduces the philosophy of data communications covering signal propagation and information encoding. It then proceeds to cover various technologies, OSI model, protocols, network architectures, internetworking concepts and TCP/IP. All this makes the book ideally suited for the first course on Data Communications and Networks.

Computer and Communication Networks, Second Edition, explains the modern technologies of networking and communications, preparing you to analyze and simulate complex networks, and to design cost-effective networks for emerging requirements. Offering uniquely balanced coverage of basic and advanced topics, it teaches through case studies,

realistic examples and exercises, and intuitive illustrations. Nader F. Mir establishes a solid foundation in basic networking concepts; TCP/IP schemes; wireless and LTE networks; Internet applications, such as Web and e-mail; and network security. Then, he delves into both network analysis and advanced networking protocols, VoIP, cloud-based multimedia networking, SDN, and virtualized networks. In this new edition, Mir provides updated, practical, scenario-based information that many networking books lack, offering a uniquely effective blend of theory and implementation. Drawing on extensive field experience, he presents many contemporary applications and covers key topics that other texts overlook, including P2P and voice/video networking, SDN, information-centric networking, and modern router/switch design. Students, researchers, and networking professionals will find up-to-date, thorough coverage of Packet switching Internet protocols (including IPv6) Networking devices Links and link interfaces LANs, WANs, and Internetworking Multicast routing, and protocols Wide area wireless networks and LTE Transport and end-to-end protocols Network applications and management Network security Network queues and delay analysis Advanced router/switch architecture QoS and scheduling Tunneling, VPNs, and MPLS All-optical networks, WDM, and GMPLS Cloud computing and network virtualization Software defined networking (SDN) VoIP signaling Media exchange and voice/video compression Distributed/cloud-based multimedia networks Mobile ad hoc networks Wireless sensor networks Key features include More than three hundred fifty figures that simplify complex topics Numerous algorithms that summarize key networking protocols and equations Up-to-date case studies illuminating concepts and theory Approximately four hundred exercises and examples honed over Mir's twenty years of teaching networking

This pioneering guide to Internet and intranet security is the first to cover all of the relevant technologies in one comprehensive reference, and enhances the ability to create and deploy secure architectures. It gives users the knowledge needed for improved productivity, whether setting up commerce on line, assembling a firewall, or selecting access controls and cryptographic protocols to secure TCP/IP-based networks.

A systems analysis approach to enterprise network design Master techniques for checking the health of an existing network to develop a baseline for measuring performance of a new network design Explore solutions for meeting QoS requirements, including ATM traffic management, IETF controlled-load and guaranteed services, IP multicast, and advanced switching, queuing, and routing algorithms Develop network designs that provide the high bandwidth and low delay required for real-time applications such as multimedia, distance learning, and videoconferencing Identify the advantages and disadvantages of various switching and routing protocols, including transparent bridging, Inter-Switch Link (ISL), IEEE 802.1Q, IGRP, EIGRP, OSPF, and BGP4 Effectively incorporate new technologies into enterprise network designs, including VPNs, wireless networking, and IP Telephony Top-Down Network Design, Second Edition, is a practical and comprehensive guide to designing enterprise networks that are reliable, secure, and manageable. Using illustrations and real-world examples, it teaches a systematic method for network design that can be applied to campus LANs, remote-access networks, WAN links, and large-scale internetworks. You will learn to analyze business and technical requirements, examine traffic flow and QoS requirements, and select protocols and technologies based on performance goals. You will also develop an understanding of network performance factors such as network utilization, throughput, accuracy, efficiency, delay, and jitter. Several charts and job aids will help you apply a top-down approach to network design. This Second Edition has been revised to include new and updated material on wireless networks, virtual private networks (VPNs), network security, network redundancy, modularity in network designs, dynamic addressing for IPv4 and IPv6, new network design and management tools, Ethernet scalability options (including 10-Gbps Ethernet, Metro Ethernet, and Long-Reach Ethernet), and networks that carry voice and data traffic. Top-Down Network Design, Second Edition, has a companion website at <http://www.topdownbook.com>, which includes updates to the book, links to white papers, and supplemental information about design resources. This book is part of the Networking Technology Series from Cisco Press, which offers networking professionals valuable information for constructing efficient networks, understanding new technologies, and building successful careers.

This book will provide a comprehensive technical guide covering fundamentals, recent advances and open issues in wireless communications and networks to the readers. The objective of the book is to serve as a valuable reference for students, educators, scientists, faculty members, researchers, engineers and research strategists in these rapidly evolving fields and to encourage them to actively explore these broad, exciting and rapidly evolving research areas.

Data Communications Pocket Book, Second Edition presents information relevant to data communication. The book provides tabulated reference materials with a brief description and diagrams. The coverage of the text includes abbreviations, terminal control codes, and conversion tables. The text will be of great use to individuals involved in the interconnection of computer systems.

Towards location aware mobile ad hoc sensors A Systems Engineering Approach to Wireless Information Networks The Second Edition of this internationally respected textbook brings readers fully up to date with the myriad of developments in wireless communications. When first published in 1995, wireless communications was synonymous with cellular telephones. Now wireless information networks are the most important technology in all branches of telecommunications. Readers can learn about the latest applications in such areas as ad hoc sensor networks, home networking, and wireless positioning. Wireless Information Networks takes a systems engineering approach: technical topics are presented in the context of how they fit into the ongoing development of new systems and services, as well as the recent developments in national and international spectrum allocations and standards. The authors have organized the myriad of current and emerging wireless technologies into logical categories: * Introduction to Wireless Networks presents an up-to-the-moment discussion of the evolution of the cellular industry from analog cellular technology to 2G, 3G, and 4G, as well as the emergence of WLAN and

WPAN as broadband ad hoc networks * Characteristics of Radio Propagation includes new coverage of channel modeling for space-time, MIMO, and UWB communications and wireless geolocation networks * Modem Design offers new descriptions of space-time coding, MIMO antenna systems, UWB communications, and multi-user detection and interference cancellation techniques used in CDMA networks * Network Access and System Aspects incorporates new chapters on UWB systems and RF geolocations, with a thorough revision of wireless access techniques and wireless systems and standards Exercises that focus on real-world problems are provided at the end of each chapter. The mix of assignments, which includes computer projects and questionnaires in addition to traditional problem sets, helps readers focus on key issues and develop the skills they need to solve actual engineering problems. Extensive references are provided for those readers who would like to explore particular topics in greater depth. With its emphasis on knowledge-building to solve problems, this is an excellent graduate-level textbook. Like the previous edition, this latest edition will also be a standard reference for the telecommunications industry.

Written by two experts in the field who deal with QoS predicaments every day and now in this 2nd edition give special attention to the realm of Data Centers, *QoS Enabled Networks: Tools and Foundations, 2nd Edition* provides a lucid understanding of modern QoS theory mechanisms in packet networks and how to apply them in practice. This book focuses on the tools and foundations of QoS providing the knowledge to understand what benefits QoS offers and what can be built on top of it.

Computer communications is one of the most rapidly developing technologies and it is a subject with which everyone in the computer systems profession should be familiar. Computer communications and networks is an introduction to communications technology and system design for practising and aspiring computer professionals. The subject is described from the computer system designer's point of view rather than from the communications engineer's viewpoint. The presentation is suitable for introductory reading as well as for reference. The emphasis is on practical, rather than theoretical, aspects and on technology which will become more important in the future. The majority of the subject matter applies to civil and military communications but some aspects which are unique to military applications have been included where considered significant. Computer communications is a rapidly changing and highly complex subject. Sufficient practical knowledge of the subject is not usually gained at university or college but is generally developed over a period of several years by trial and error, attending courses, reading reference books and journals; this book attempts to simplify and speed up the process by bringing together a body of information which is otherwise distributed throughout many books and journals. The information is presented in a framework which makes a wider understanding of the subject possible. Basic knowledge of communications is assumed, a general familiarity with computer systems is anticipated in later chapters, and, where relevant, theory is explained.

Appropriate for a first course on computer networking, this textbook describes the architecture and function of the application, transport, network, and link layers of the internet protocol stack, then examines audio and video networking applications, the underpinnings of encryption and network security, and the key issues of network management. The

As we all know by now, wireless networks offer many advantages over fixed (or wired) networks. Foremost on that list is mobility, since going wireless frees you from the tether of an Ethernet cable at a desk. But that's just the tip of the cable-free iceberg. Wireless networks are also more flexible, faster and easier for you to use, and more affordable to deploy and maintain. The de facto standard for wireless networking is the 802.11 protocol, which includes Wi-Fi (the wireless standard known as 802.11b) and its faster cousin, 802.11g. With easy-to-install 802.11 network hardware available everywhere you turn, the choice seems simple, and many people dive into wireless computing with less thought and planning than they'd give to a wired network. But it's wise to be familiar with both the capabilities and risks associated with the 802.11 protocols. And *802.11 Wireless Networks: The Definitive Guide, 2nd Edition* is the perfect place to start. This updated edition covers everything you'll ever need to know about wireless technology. Designed with the system administrator or serious home user in mind, it's a no-nonsense guide for setting up 802.11 on Windows and Linux. Among the wide range of topics covered are discussions on: deployment considerations network monitoring and performance tuning wireless security issues how to use and select access points network monitoring essentials wireless card configuration security issues unique to wireless networks With wireless technology, the advantages to its users are indeed plentiful. Companies no longer have to deal with the hassle and expense of wiring buildings, and households with several computers can avoid fights over who's online. And now, with *802.11 Wireless Networks: The Definitive Guide, 2nd Edition*, you can integrate wireless technology into your current infrastructure with the utmost confidence.

Pick up where certification exams leave off. With this practical, in-depth guide to the entire network infrastructure, you'll learn how to deal with real Cisco networks, rather than the hypothetical situations presented on exams like the CCNA. *Network Warrior* takes you step by step through the world of routers, switches, firewalls, and other technologies based on the author's extensive field experience. You'll find new content for MPLS, IPv6, VoIP, and wireless in this completely revised second edition, along with examples of Cisco Nexus 5000 and 7000 switches throughout. Topics include: An in-depth view of routers and routing Switching, using Cisco Catalyst and Nexus switches as examples SOHO VoIP and SOHO wireless access point design and configuration Introduction to IPv6 with configuration examples Telecom technologies in the data-networking world, including T1, DS3, frame relay, and MPLS Security, firewall theory, and configuration, as well as ACL and authentication Quality of Service (QoS), with an emphasis on low-latency queuing (LLQ) IP address allocation, Network Time Protocol (NTP), and device failures

What every electrical engineering student and technical professional needs to know about data exchange across networks While most electrical engineering students learn how the individual components that make up data communication technologies work, they rarely learn how the parts work together in complete data communication networks. In part, this is due to the fact that until now there have been no texts on data communication networking written for undergraduate electrical engineering students. Based on the author's years of classroom experience, *Fundamentals of Data Communication Networks* fills that gap in the pedagogical literature, providing readers with a much-needed overview of all relevant aspects of data communication networking, addressed from the perspective of the various technologies involved. The demand for information exchange in networks continues to grow at a staggering rate, and that demand will continue to mount exponentially as the number of interconnected IoT-enabled devices grows to an expected twenty-six billion by the year 2020. Never has it been more urgent for engineering students to understand the fundamental science and technology behind data communication, and this book, the first of its kind, gives them that understanding. To achieve this goal, the book: Combines signal theory, data protocols, and wireless networking concepts into one text Explores the full range of issues that affect common processes such as media downloads and online games Addresses services for the network layer, the transport layer, and the application layer Investigates multiple access schemes and local area networks with coverage of services for the physical layer and the data link layer Describes mobile communication networks and critical issues in network security Includes problem sets in each chapter to test and fine-tune readers' understanding *Fundamentals of Data Communication Networks* is a must-read for advanced undergraduates and graduate students in electrical and

computer engineering. It is also a valuable working resource for researchers, electrical engineers, and technical professionals.

Whether you are an executive or sales manager in a networking company, a data communications engineer, or a telecommunications professional, you must have a thorough working knowledge of the ever growing and interrelated array of telecom and data communications technologies. From protocols and operation of the Internet (IP, TCP, HTTP, ...) and its access systems such as ADSL, and GSM... to the basics of transmission and switching, this newly revised resource delivers an up-to-date introduction to a broad range of networking technologies, clearly explaining the networking essentials you need to know to be a successful networking professional. Moreover, the book explores the future developments in optical, wireless and digital broadcast communications.

The classic guide to network security—now fully updated!"Bob and Alice are back!" Widely regarded as the most comprehensive yet comprehensible guide to network security, the first edition of Network Security received critical acclaim for its lucid and witty explanations of the inner workings of network security protocols. In the second edition, this most distinguished of author teams draws on hard-won experience to explain the latest developments in this field that has become so critical to our global network-dependent society. Network Security, Second Edition brings together clear, insightful, and clever explanations of every key facet of information security, from the basics to advanced cryptography and authentication, secure Web and email services, and emerging security standards. Coverage includes: All-new discussions of the Advanced Encryption Standard (AES), IPsec, SSL, and Web security Cryptography: In-depth, exceptionally clear introductions to secret and public keys, hashes, message digests, and other crucial concepts Authentication: Proving identity across networks, common attacks against authentication systems, authenticating people, and avoiding the pitfalls of authentication handshakes Core Internet security standards: Kerberos 4/5, IPsec, SSL, PKIX, and X.509 Email security: Key elements of a secure email system-plus detailed coverage of PEM, S/MIME, and PGP Web security: Security issues associated with URLs, HTTP, HTML, and cookies Security implementations in diverse platforms, including Windows, NetWare, and Lotus Notes The authors go far beyond documenting standards and technology: They contrast competing schemes, explain strengths and weaknesses, and identify the crucial errors most likely to compromise secure systems. Network Security will appeal to a wide range of professionals, from those who design or evaluate security systems to system administrators and programmers who want a better understanding of this important field. It can also be used as a textbook at the graduate or advanced undergraduate level.

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

Rapid advances in networking technology have promoted a fully revised second edition of this successful introduction to communication networks.

Data Communication Principles for Fixed and Wireless Networks focuses on the physical and data link layers. Included are examples that apply to a diversified range of higher level protocols such as TCP/IP, OSI and packet based wireless networks. Performance modeling is introduced for beginners requiring basic mathematics. Separate discussion has been included on wireless cellular networks performance and on the simulation of networks. Throughout the book, wireless LANs has been given the same level of treatment as fixed network protocols. It is assumed that readers would be familiar with basic mathematics and have some knowledge of binary number systems. Data Communication Principles for Fixed and Wireless Networks is for students at the senior undergraduate and first year graduate levels. It can also be used as a reference work for professionals working in the areas of data networks, computer networks and internet protocols.

VSAT Networks: Second Edition covers all the important issues involved with the installation of VSAT systems. Since the first edition was published, the VSAT market has continued to expand steadily. VSAT technologies have advanced, prompting an increase in the take-up of VSAT services. Offering a comprehensive introduction to the topic followed by a detailed exploration of multiple access protocols, delay analysis and system dimensioning, this edition is a highly relevant update of VSAT Networks. Written by a well respected and established member of the satellite community, it will be welcomed by academics and engineers alike. Covers important issues of services, economics and regulatory aspects Provides a detailed technical insight on networking and radio frequency link aspects, therefore addressing the specific features of VSAT networks at the three lower layers of the OSI Reference Layer Model for data communications This timely second edition is fully updated with new figures, improvements and revised chapter on future developments This book will appeal to students of telecommunications, electronics and computer science. Practising telecommunications engineers and technical managers involved in the planning, design and operation of VSAT networks and systems will also find this book a valuable reference source.

As the dividing line between traditional computing science and telecommunications quickly becomes blurred or disappears in today's rapidly changing environment, there is an increasing need for computer professionals to possess knowledge of telecommunications principles. Telecommunications and Networking presents a comprehensive overview of the interaction and relationship between telecommunications and data processing. The book's early chapters cover basic telecommunications vocabulary, common nomenclature, telecommunications fundamentals, as well as the important relationships among coding, error detection and correction, and noise. Later chapters discuss such topics as switching, timing, topological structures, routing algorithms, and teleprocessing. Other topics covered in detail include specific concerns inherent to computer communications, such as protocols, error detection and correction, network monitoring and security, and system validation. System designers and programmers can no longer be effective simply by understanding the tradeoffs between hardware and software. Telecommunications and Networking provides both computing professionals and students the fundamental computer communications concepts necessary to function in today's computer industry.

Today's networks are required to support an increasing array of real-time communication methods. Video chat, real-time messaging, and always-connected resources put demands on networks that were previously unimagined. The Second Edition of Fundamentals of Communications and Networking helps readers better understand today's networks and the way they support the evolving requirements of different types of organizations. It discusses the critical issues of designing a network that will meet an organization's performance needs and discusses how businesses use networks to solve business

problems. Using numerous examples and exercises, this text incorporates hands-on activities to prepare readers to fully understand and design modern networks and their requirements. Key Features of the Second Edition: - Introduces network basics by describing how networks work - Discusses how networks support the increasing demands of advanced communications - Illustrates how to map the right technology to an organization's needs and business goals - Outlines how businesses use networks to solve business problems, both technically and operationally.

. This book is designed for introductory one-semester or one-year courses in communications networks in upper-level undergraduate programs. The second half of the book can be used in more advanced courses. As pre-requisites the book assumes a general knowledge of computer systems and programming, and elementary calculus. The second edition expands on the success of the first edition by updating on technological changes in networks and responding to comprehensive market feedback..

This volume is designed to develop an understanding of data networks and evolving integrated networks, and to explore evolving integrated networks and the various analysis and design tools. It begins with an overview of the principles behind data networks, then develops an understanding of the modelling issues and mathematical analysis needed to compare the effectiveness of different networks.

Business Data Communications, 6/e, is ideal for use in Business Data Communications, Data Communications, and introductory Networking for Business courses. Business Data Communications, 6/e, covers the fundamentals of data communications, networking, distributed applications, and network management and security. Stallings presents these concepts in a way that relates specifically to the business environment and the concerns of business management and staff, structuring his text around requirements, ingredients, and applications. While making liberal use of real-world case studies and charts and graphs to provide a business perspective, the book also provides the student with a solid grasp of the technical foundation of business data communications. Throughout the text, references to the interactive, online animations supply a powerful tool in understanding complex protocol mechanisms. The Sixth Edition maintains Stallings' superlative support for either a research projects or modeling projects component in the course. The diverse set of projects and student exercises enables the instructor to use the book as a component in a rich and varied learning experience and to tailor a course plan to meet the specific needs of the instructor and students.

Introduction, datacommunications, information theory, introduction to local area networks. Internet protocols ...

Thoroughly updated for currency, this book offers a clear presentation of data communications and network fundamentals. Featuring a wide array of applications, the book fully explains concepts and supports them with case studies or descriptions of specific software and other products. Students learn the protocols of analog and digital signals, data compression, data integrity, data security, local area networks, asynchronous transfer mode (ATM), and much more. The third edition includes important information on the latest developments of the Internet. As the world grows increasingly interconnected, data communications has become a critical aspect of business operations. Wireless and mobile technology allows us to seamlessly transition from work to play and back again, and the Internet of things has brought our appliances, vehicles, and homes into the network; as life increasingly takes place online, businesses recognize the opportunity for a competitive advantage. Today's networking professionals have become central to nearly every aspect of business, and this book provides the essential foundation needed to build and manage the scalable, mobile, secure networks these businesses require. Although the technologies evolve rapidly, the underlying concepts are more constant. This book combines the foundational concepts with practical exercises to provide a well-grounded approach to networking in business today. Key management and technical issues are highlighted and discussed in the context of real-world applications, and hands-on exercises reinforce critical concepts while providing insight into day-to-day operations. Detailed technical descriptions reveal the tradeoffs not presented in product summaries, building the analytical capacity needed to understand, evaluate, and compare current and future technologies.

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