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Artificial Intelligence, Computer and Software Engineering Advances The Complete Guide to SCION HCNA Networking Study Guide Enterprise Wireless Local Area Network Architectures and Technologies The ComSoc Guide to Passive Optical Networks Factories of the Future: Manager's Guide to Industry 4.0 Handbook of Research on Redesigning the Future of Internet Architectures Resource Management in Future Internet 5G Explained Low-Power Computer Vision Internet of Things. IoT Infrastructures Achieving the Triple Play Fundamentals of 5G Mobile Networks Spectrum Sharing in Wireless Networks LPWAN Technologies for IoT and M2M Applications 5G Verticals Broadband Communications, Networks, and Systems Unmanned Aerial Vehicle Cellular Communications The Essential Guide to Telecommunications Progress in Systems Engineering Introduction to DWDM Technology System z End-to-End Extended Distance Guide IBM Power Systems SR-IOV: Technical Overview and Introduction Ccna Routing and Switching Portable Command Guide Cisco ASA Southern African Wireless Communications Network Calculus Design, Deployment and Performance of 4G-LTE Networks A Comprehensive Guide to 5G Security The Digital Transformation of Logistics Software Defined Networks Cellular Communications Voice & Data Network Management and Maintenance IoT Fundamentals India telecom Managing Distributed Cloud Applications and Infrastructure The TOGAF ® Standard, Version 9.2 - A Pocket Guide Cloud Computing Broadband Communications, Networks, and Systems

Broadband Communications, Networks, and Systems Dec 12 2021 This book constitutes the refereed post-conference proceedings of the 11th International Conference on Broadband Communications, Networks, and Systems, Broadnets 2020, which took place in Qingdao, China, in December 2020. The 13 full papers presented were carefully reviewed and selected from 32 submissions. The papers are thematically grouped as a session on wireless network and security and a session on communication quality.

Artificial Intelligence, Computer and Software Engineering Advances Apr 28 2023 This book constitutes the proceedings of the XV Multidisciplinary International Congress on Science and Technology (CIT 2020), held in Quito, Ecuador, on 26–30 October 2020, proudly organized by Universidad de las Fuerzas Armadas ESPE in collaboration with GDEON. CIT is an international event with a multidisciplinary approach that promotes the dissemination of advances in Science and Technology research through the presentation of keynote conferences. In CIT, theoretical, technical, or application works that are research products are presented to discuss and debate ideas, experiences, and challenges. Presenting high-quality, peer-reviewed papers, the book discusses the following topics: Artificial Intelligence Computational Modeling Data Communications Defense Engineering Innovation, Technology, and Society Managing Technology & Sustained Innovation, and Business Development Modern Vehicle Technology Security and Cryptography Software Engineering

Cellular Communications Aug 28 2020 Even as newer cellular technologies and standards emerge, many of the fundamental principles and

the components of the cellular network remain the same. Presenting a simple yet comprehensive view of cellular communications technologies, Cellular Communications provides an end-to-end perspective of cellular operations, ranging from physical layer details to call set-up and from the radio network to the core network. This self-contained source for practitioners and students represents a comprehensive survey of the fundamentals of cellular communications and the landscape of commercially deployed 2G and 3G technologies and provides a glimpse of emerging 4G technologies.

Network Calculus Feb 02 2021 Network Calculus is a set of recent developments that provide deep insights into flow problems encountered in the Internet and in intranets. The first part of the book is a self-contained, introductory course on network calculus. It presents the core of network calculus, and shows how it can be applied to the Internet to obtain results that have physical interpretations of practical importance to network engineers. The second part serves as a mathematical reference used across the book. It presents the results from Min-plus algebra needed for network calculus. The third part contains more advanced material. It is appropriate reading for a graduate course and a source of reference for professionals in networking by surveying the state of the art of research and pointing to open problems in network calculus and its application in different fields, such as mulitmedia smoothing, aggegate scheduling, adaptive guarantees in Internet differential services, renegotiated reserved services, etc.

LPWAN Technologies for IoT and M2M Applications Feb 14 2022 Low power wide area network (LPWAN) is a promising solution for long range and low power Internet of Things (IoT) and machine to machine (M2M) communication applications. The LPWANs are resource-constrained networks and have critical requirements for long battery life, extended coverage, high scalability, and low device and deployment costs. There are several design and deployment challenges such as media access control, spectrum management, link optimization and adaptability, energy harvesting, duty cycle restrictions, coexistence and interference, interoperability and heterogeneity, security and privacy, and others. LPWAN Technologies for IoT and M2M Applications is intended to provide a one-stop solution for study of LPWAN technologies as it covers a broad range of topics and multidisciplinary aspects of LPWAN and IoT. Primarily, the book focuses on design requirements and constraints, channel access, spectrum management, coexistence and interference issues, energy efficiency, technology candidates, use cases of different applications in smart city, healthcare, and transportation systems, security issues, hardware/software platforms, challenges, and future directions. One stop guide to the technical details of various low power long range technologies such as LoRaWAN, Sigfox, NB-IoT, LTE-M and others Describes the design aspects, network architectures, security issues and challenges Discusses the performance, interference, coexistence issues and energy optimization techniques Includes LPWAN based intelligent applications in diverse areas such as smart city, traffic management, health and others Presents the different hardware and software platforms for LPWANs Provides guidance on selecting the right technology for an application

System z End-to-End Extended Distance Guide Jul 07 2021 This IBM® Redbooks® publication will help you design and manage an end-to-end, extended distance connectivity architecture for IBM System z®. This solution addresses your requirements now, and positions you to make effective use of new technologies in the future. Many enterprises implement extended distance connectivity in a silo manner. However, effective extended distance solutions require the involvement of different teams within an organization. Typically there is a network group, a storage group, a systems group, and possibly other teams. The intent of this publication is to help you design and manage a solution that will provide for all of your System z extended distance needs in the most effective and flexible way possible. This book introduces an approach to help plan, optimize, and maintain all of the moving parts of the solution together.

5G Explained Aug 20 2022 Practical Guide Provides Students and Industry Professionals with Latest Information on 5G Mobile Networks Continuing the tradition established in his previous publications, Jyrki Penttinen offers 5G Explained as a thorough yet concise introduction to recent advancements and growing trends in mobile telecommunications. In this case, Penttinen focuses on the development and employment of 5G mobile networks and, more specifically, the challenges inherent in adjusting to new global standardization requirements and in maintaining a high level of security even as mobile technology expands to new horizons. The text discusses, for example, the Internet of Things (IoT) and how to keep networks reliable and secure when they are constantly accessed by many different devices with varying levels of user involvement and competence. 5G Explained is primarily designed for specialists who need rapid acclimation to the possibilities and concerns presented by 5G adoption. Therefore, it assumes some prior knowledge of mobile communications. However, earlier chapters are structured so that even relative newcomers will gain useful information. Other notable features include: Three modules each consisting of three chapters: Introduction, Technical Network Description and Planning of Security and Deployment Comprehensive coverage of topics such as technical requirements for 5G, network architecture, radio and core networks and services/applications Discussion of specific security techniques in addition to common-sense guidelines for planning, deploying, managing and optimizing 5G networks 5G Explained offers crucial updates for anyone involved in designing, deploying or working with 5G networks. It should prove a valuable guide for operators, equipment manufacturers and other professionals in mobile equipment engineering and security, network planning and optimization, and mobile application development, or anyone looking to break into these fields.

Achieving the Triple Play May 17 2022 One of the most popular offerings telecom companies now provide is the triple play, which consists of voice, video, and data, all from one company and with one bill. This book addresses the challenges and benefits of offering converged services and looks at how the new technology is affecting companies and customers.

Voice & Data Jul 27 2020

Cloud Computing Jan 21 2020 Cloud Computing: Theory and Practice provides students and IT professionals with an in-depth analysis of the cloud from the ground up. Beginning with a discussion of parallel computing and architectures and distributed systems, the book turns to contemporary cloud infrastructures, how they are being deployed at leading companies such as Amazon, Google and Apple, and how they can be applied in fields such as healthcare, banking and science. The volume also examines how to successfully deploy a cloud application across the enterprise using virtualization, resource management and the right amount of networking support, including content delivery networks and storage area networks. Developers will find a complete introduction to application development provided on a variety of platforms. Learn about recent trends in cloud computing in critical areas such as: resource management, security, energy consumption, ethics, and complex systems Get a detailed hands-on set of practical recipes that help simplify the deployment of a cloud based system for practical use of computing clouds along with an in-depth discussion of several projects Understand the evolution of cloud computing and why the cloud computing paradigm has a better chance to succeed than previous efforts in large-scale distributed computing

Southern African Wireless Communications Mar 03 2021

5G Verticals Jan 13 2022 A comprehensive text to an understanding the next generation mobile broadband and wireless Internet of Things (IoT) technologies 5G Verticals brings together in one comprehensive volume a group of visionaries and technical experts from academia and industry. The expert authors discuss the applications and technologies that comprise 5G verticals. The earlier network generations (2G to 4G) were designed as on-size-fits-all, general-purpose connectivity platforms with limited differentiation capabilities. 5G networks have the capability

to demand customizable mobile networks and create an ecosystem for technical and business innovation involving vertical markets such as automotive, healthcare, manufacturing, energy, food and agriculture, city management, government, public transportation, media and more. 5G will serve a large portfolio of applications with various requirements ranging from high reliability to ultra-low latency going through high bandwidth and mobility. In this book, the authors explore applications and usages of various 5G verticals including a set of key metrics for these uses and their corresponding target requirements. The book also examines the potential network architectures and enabling technologies to meet the requirements of 5G verticals. This important book: Offers a comprehensive resource to the promise of 5G Verticals Provides a set of key metrics for the uses and target requirements Contains illustrative examples of the technology and applications Includes contributions from experts in the field and professionals that developed the 5G standards Provides an analysis of specific vertical industries which have the potential to be among the first industries to use 5G Written for industry practitioners, engineers and researchers, 5G Verticals discusses the technology that enables the 5G system to be flexibly deployed and scaled.

The Complete Guide to SCION Mar 27 2023 When the SCION project started in 2009, the goal was to create an architecture offering high availability and security for basic point-to-point communication. In the five years since the publication of SCION: A Secure Internet Architecture, this next-generation Internet architecture has evolved in terms of both design and deployment. On the one hand, there has been development of exciting new concepts and systems, including a new global time-synchronization system, an inter-domain approach for bandwidth reservations called COLIBRI, and Green Networking, which allows combating global climate change on three fronts. On the other hand, SCION is now also in production use by the Swiss financial ecosystem, and enables participants such as the Swiss National Bank, the Swiss provider of clearing services (SIX), and all Swiss financial institutes to communicate securely and reliably with each other via the Secure Swiss Finance Network. This unique guidebook provides an updated description of SCION's main components, covering new research topics and the most recent deployments. In particular, it presents in-depth discussion of formal verification efforts. Importantly, it offers a comprehensive, thorough description of the current SCION system: Describes the principles that guided SCION's design as a secure and robust Internet architecture Provides a comprehensive description of the next evolution in the way data finds its way through the Internet Explains how SCION can contribute to reducing carbon emissions, by introducing SCION Green Networking Demonstrates how SCION not only functions in academic settings but also works in production deployments Discusses additional use cases for driving SCION's adoption Presents the approaches for formal verification of protocols and code Illustrated with many colorful figures, pictures, and diagrams, allowing easy access to the concepts and use cases Assembled by a team with extensive experience in the fields of computer networks and security, this text/reference is suitable for researchers, practitioners, and graduate students interested in network security. Also, readers with limited background in computer networking but with a desire to know more about SCION will benefit from an overview of relevant chapters in the beginning of the book.

A Comprehensive Guide to 5G Security Nov 30 2020 The first comprehensive guide to the design and implementation of security in 5G wireless networks and devices Security models for 3G and 4G networks based on Universal SIM cards worked very well. But they are not fully applicable to the unique security requirements of 5G networks. 5G will face additional challenges due to increased user privacy concerns, new trust and service models and requirements to support IoT and mission-critical applications. While multiple books already exist on 5G, this is the first to focus exclusively on security for the emerging 5G ecosystem. 5G networks are not only expected to be faster, but provide a backbone for many new services, such as IoT and the Industrial Internet. Those services will provide connectivity for everything from autonomous cars and UAVs to remote health monitoring through body-attached sensors, smart logistics through item tracking to remote diagnostics and preventive

maintenance of equipment. Most services will be integrated with Cloud computing and novel concepts, such as mobile edge computing, which will require smooth and transparent communications between user devices, data centers and operator networks. Featuring contributions from an international team of experts at the forefront of 5G system design and security, this book: Provides priceless insights into the current and future threats to mobile networks and mechanisms to protect it Covers critical lifecycle functions and stages of 5G security and how to build an effective security architecture for 5G based mobile networks Addresses mobile network security based on network-centricity, device-centricity, information-centricity and people-centricity views Explores security considerations for all relative stakeholders of mobile networks, including mobile network operators, mobile network virtual operators, mobile users, wireless users, Internet-of things, and cybersecurity experts Providing a comprehensive guide to state-of-the-art in 5G security theory and practice, A Comprehensive Guide to 5G Security is an important working resource for researchers, engineers and business professionals working on 5G development and deployment.

Resource Management in Future Internet Sep 21 2022 Future Internet and Internet of Things set out a new vision for connectivity, real-time applications and services. Data procured from the use of a large number of heterogeneous physical and virtual devices must be real-time processed and analyzed for the goal of effective resource management and control while maintaining the required performance and quality of service. In addition, the development of the communication networks towards heterogeneous and new generation broadband connectivity brings up new requirements towards the way of managing and controlling of the available resources. Thus for the effective resource management in future internet novel approaches must be proposed and developed. It could be seen that recently a considerable amount of effort has been devoted on behalf of industry and academia, towards the research and design of methods for effective management of resources in internet and multimedia communications. The book reviews some specific topics in the field of future internet and internet technologies that are closely related to the issue of finding effective solutions for the management of resources and performance. Technical topics discussed in the book include: • Future Internet Technologies;• Internet of things;• Multimedia Networks;• Wireless Access Networks;• Software Communications;• Positioning and Localization in Communications;• Resource Management.Resource Management in future Internet is recommended for specialists working in the field of information and communication industries as well as academic staff and researchers working in the field of multimedia communications and telecommunication networks.

Internet of Things. IoT Infrastructures Jun 18 2022 The two-volume set LNICST 169 and 170 constitutes the thoroughly refereed post-conference proceedings of the Second International Internet of Things Summit, IoT 360° 2015, held in Rome, Italy, in October 2015. The IoT 360° is an event bringing a 360 degree perspective on IoT-related projects in important sectors such as mobility, security, healthcare and urban spaces. The conference also aims to coach involved people on the whole path between research to innovation and the way through to commercialization in the IoT domain. This volume contains 62 revised full papers at the following four conferences: The International Conference on Safety and Security in Internet of Things, SaSeIoT, the International Conference on Smart Objects and Technologies for Social Good, GOODTECHS, the International Conference on Cloud, Networking for IoT systems, CN4IoT, and the International Conference on IoT Technologies for HealthCare, HealthyIoT.

Unmanned Aerial Vehicle Cellular Communications Nov 11 2021 The book discusses how Unmanned Aerial Vehicles (UAVs) can leverage the sub-6 GHz massive MIMO to address cell selection and interference issues in future wireless networks. The book takes a close look at utilizing UAVs to achieving direct and efficient device-to device (D2D) communications in the sky. Also, the key 6G enablers (cell-free architectures, artificial intelligence, reconfigurable intelligent surfaces, THz communications, and non-terrestrial networks) for UAV communication are

broached, and the primary technological challenges of each enabler are discussed extensively. Furthermore, the book covers the design of adaptable UAVs to operate in diverse and harsh environmental conditions. Additionally, the existing UAVs' networking protocols and how these can be greatly enhanced to address the issue of intermittent network changes and channel impairments are discussed. The prospects and societal benefits envisioned in future UAVs are also presented.

Factories of the Future: Manager's Guide to Industry 4.0 Nov 23 2022 The manufacturing world is undergoing a massive digital transformation. Smart and connected infrastructures powered by artificial intelligence are bringing about yet another industrial revolution. Data based innovation is creating unprecedented opportunities for optimizing processes and gaining competitive advantage through new business models. In this book, we follow the magnificent story of the first three industrial revolutions in the tracks of great scientists, engineers and industrialists of yesterday, all the way up to cyber physical systems that will redefine the manufacturing value chain. Smart manufacturing revolution is rebuilding the factory from the ground up, changing old ways of doing business. Join me on this journey where we cover all the basic concepts and enabling technologies, then move on to formulate viable strategies on the path to Industry 4.0; for creating the Factories of the Future.

Progress in Systems Engineering Sep 09 2021 This collection of proceedings from the International Conference on Systems Engineering, Las Vegas, 2014 is orientated toward systems engineering, including topics like aero-space, power systems, industrial automation and robotics, systems theory, control theory, artificial intelligence, signal processing, decision support, pattern recognition and machine learning, information and communication technologies, image processing, and computer vision as well as its applications. The volume's main focus is on models, algorithms, and software tools that facilitate efficient and convenient utilization of modern achievements in systems engineering.

India telecom Apr 23 2020

Enterprise Wireless Local Area Network Architectures and Technologies Jan 25 2023 This book has been written with the support of Huawei's large accumulation of technical knowledge and experience in the WLAN field, as well as its understanding of customer service requirements. First, the book covers service challenges facing enterprise wireless networks, along with detailing the latest evolution of Wi-Fi standards, air interface performance, and methods for improving user experience in enterprise scenarios. Furthermore, it illustrates typical networking, planning, and scenario-specific design for enterprise WLANs, and provides readers with a comprehensive understanding of enterprise WLAN planning, design, and technical implementation, as well as suggestions for deployment. This is a practical and easy-to-understand guide to WLAN design, and is written for WLAN technical support and planning engineers, network administrators, and enthusiasts of network technology. Authors Rihai Wu is Chief Architect of Huawei's campus network WLAN solution with 16 years of experience in wireless communications product design and a wealth of expertise in network design and product development. He previously served as a designer and developer of products for Wideband Code Division Multiple Access (WCDMA), LTE indoor small cells, and WLAN. Xun Yang is a WLAN standard expert from Huawei. He has nine years of experience in formulating WLAN standards, and previously served as 802.11ac Secretary, 802.11ah PHY Ad-hoc Co-chair, and 802.11ax MU Ad Hoc Sub Group Co-chair. Mr. Yang oversees technical research, the promotion of standards, and industrialization in the WLAN field, and has filed more than 100 patents. Xia Zhou is a documentation engineer of Huawei's campus network WLAN solution. She has 10 years of experience in creating documents for campus network products. Ms. Zhou was previously in charge of writing manuals for Huawei data center switches, WLAN products, and campus network solutions. She is also the author of Campus Network Solution Deployment Guide and was a co-sponsor of technical sessions such as WLAN from Basics to Proficiency. Yibo Wang is a

documentation engineer of Huawei's campus network WLAN solution. He has nine years of experience in creating documents for campus network products. Mr. Wang was previously in charge of writing manuals for Huawei switches, WLAN products, and routers. He was also a co-sponsor of technical sessions such as WLAN from Basics to Proficiency and HCIA-WLAN certification training courses.

Design, Deployment and Performance of 4G-LTE Networks Jan 01 2021 This book provides an insight into the key practical aspects and best practice of 4G-LTE network design, performance, and deployment Design, Deployment and Performance of 4G-LTE Networks addresses the key practical aspects and best practice of 4G networks design, performance, and deployment. In addition, the book focuses on the end-to-end aspects of the LTE network architecture and different deployment scenarios of commercial LTE networks. It describes the air interface of LTE focusing on the access stratum protocol layers: PDCP, RLC, MAC, and Physical Layer. The air interface described in this book covers the concepts of LTE frame structure, downlink and uplink scheduling, and detailed illustrations of the data flow across the protocol layers. It describes the details of the optimization process including performance measurements and troubleshooting mechanisms in addition to demonstrating common issues and case studies based on actual field results. The book provides detailed performance analysis of key features/enhancements such as C-DRX for Smartphones battery saving, CSFB solution to support voice calls with LTE, and MIMO techniques. The book presents analysis of LTE coverage and link budgets alongside a detailed comparative analysis with HSPA+. Practical link budget examples are provided for data and VoLTE scenarios. Furthermore, the reader is provided with a detailed explanation of capacity dimensioning of the LTE systems. The LTE capacity analysis in this book is presented in a comparative manner with reference to the HSPA+ network to benchmark the LTE network capacity. The book describes the voice options for LTE including VoIP protocol stack, IMS Single Radio Voice Call Continuity (SRVCC). In addition, key VoLTE features are presented: Semi-persistent scheduling (SPS), TTI bundling, Quality of Service (QoS), VoIP with C-DRX, Robust Header Compression (RoHC), and VoLTE Vocoders and De-Jitter buffer. The book describes several LTE and LTE-A advanced features in the evolution from Release 8 to 10 including SON, eICIC, CA, CoMP, HetNet, Enhanced MIMO, Relays, and LBS. This book can be used as a reference for best practices in LTE networks design and deployment, performance analysis, and evolution strategy. Conveys the theoretical background of 4G-LTE networks Presents key aspects and best practice of 4G-LTE networks design and deployment Includes a realistic roadmap for evolution of deployed 3G/4G networks Addresses the practical aspects for designing and deploying commercial LTE networks. Analyzes LTE coverage and link budgets, including a detailed comparative analysis with HSPA+. References the best practices in LTE networks design and deployment, performance analysis, and evolution strategy Covers infrastructure-sharing scenarios for CAPEX and OPEX saving. Provides key practical aspects for supporting voice services over LTE, Written for all 4G engineers/designers working in networks design for operators, network deployment engineers, R&D engineers, telecom consulting firms, measurement/performance tools firms, deployment subcontractors, senior undergraduate students and graduate students interested in understanding the practical aspects of 4G-LTE networks as part of their classes, research, or projects.

Ccna Routing and Switching Portable Command Guide May 05 2021 Covers topics covered in the ICND1 100-101, ICND2 200-101, and CCNA 200-120 exams along with a summarization of commands, keywords, command augments, and associated prompts.

The TOGAF ® Standard, Version 9.2 - A Pocket Guide Feb 20 2020 This is the official Pocket Guide for the TOGAF® Standard, Version 9.2, from The Open Group. It is published in hard copy and electronic formats by Van Haren Publishing. The TOGAF Standard, a standard of The Open Group, is a proven Enterprise Architecture methodology and framework used by the world’s leading organizations to improve business efficiency. It is the most prominent and reliable Enterprise Architecture standard, ensuring consistent standards, methods, and communication

among Enterprise Architecture professionals. Those professionals who are fluent in the TOGAF approach enjoy greater industry credibility, job effectiveness, and career opportunities. The TOGAF approach helps practitioners avoid being locked into proprietary methods, utilize resources more efficiently and effectively, and realize a greater return on investment.

Broadband Communications, Networks, and Systems Dec 20 2019 This book constitutes the refereed post-conference proceedings of the 11th International Conference on Broadband Communications, Networks, and Systems, Broadnets 2020, which took place in Qingdao, China, in December 2020. The 13 full papers presented were carefully reviewed and selected from 32 submissions. The papers are thematically grouped as a session on wireless network and security and a session on communication quality.

IBM Power Systems SR-IOV: Technical Overview and Introduction Jun 06 2021 This IBM® RedpaperTM publication describes the adapter-based virtualization capabilities that are being deployed in high-end IBM POWER7+TM processor-based servers. Peripheral Component Interconnect Express (PCIe) single root I/O virtualization (SR-IOV) is a virtualization technology on IBM Power Systems servers. SR-IOV allows multiple logical partitions (LPARs) to share a PCIe adapter with little or no run time involvement of a hypervisor or other virtualization intermediary. SR-IOV does not replace the existing virtualization capabilities that are offered as part of the IBM PowerVM® offerings. Rather, SR-IOV compliments them with additional capabilities. This paper describes many aspects of the SR-IOV technology, including: A comparison of SR-IOV with standard virtualization technology Overall benefits of SR-IOV Architectural overview of SR-IOV Planning requirements SR-IOV deployment models that use standard I/O virtualization Configuring the adapter for dedicated or shared modes Tips for maintaining and troubleshooting your system Scenarios for configuring your system This paper is directed to clients, IBM Business Partners, and system administrators who are involved with planning, deploying, configuring, and maintaining key virtualization technologies.

The Essential Guide to Telecommunications Oct 10 2021

Low-Power Computer Vision Jul 19 2022 Energy efficiency is critical for running computer vision on battery-powered systems, such as mobile phones or UAVs (unmanned aerial vehicles, or drones). This book collects the methods that have won the annual IEEE Low-Power Computer Vision Challenges since 2015. The winners share their solutions and provide insight on how to improve the efficiency of machine learning systems.

Introduction to DWDM Technology Aug 08 2021 Using simple language, this text explains the properties of light, its interaction with matter, and how it is used to develop optical components such as filters and multiplexers that have applications in optical communications. The text also introduces the evolving dense wavelength division multiplexing (DWDM) technology and communications systems.

Cisco ASA Apr 04 2021 This is the eBook version of the printed book. If the print book includes a CD-ROM, this content is not included within the eBook version. For organizations of all sizes, the Cisco ASA product family offers powerful new tools for maximizing network security. Cisco ASA: All-in-One Firewall, IPS, Anti-X and VPN Adaptive Security Appliance, Second Edition, is Cisco's authoritative practitioner's guide to planning, deploying, managing, and troubleshooting security with Cisco ASA. Written by two leading Cisco security experts, this book presents each Cisco ASA solution in depth, offering comprehensive sample configurations, proven troubleshooting methodologies, and debugging examples. Readers will learn about the Cisco ASA Firewall solution and capabilities; secure configuration and troubleshooting of site-to-site and remote access VPNs; Intrusion Prevention System features built into Cisco ASA's Advanced Inspection and Prevention Security Services Module (AIP-SSM); and Anti-X features in the ASA Content Security and Control Security Services Module (CSC-SSM). This new edition has been updated with detailed information on the latest ASA models and features. Everything network professionals need to know to identify,

mitigate, and respond to network attacks with Cisco ASA Includes detailed configuration examples, with screenshots and command line references Covers the ASA 8.2 release Presents complete troubleshooting methodologies and architectural references

Spectrum Sharing in Wireless Networks Mar 15 2022 Spectrum Sharing in Wireless Networks: Fairness, Efficiency, and Security provides a broad overview of wireless network spectrum sharing in seven distinct sections: The first section examines the big picture and basic principles, explaining the concepts of spectrum sharing, hardware/software function requirements for efficient sharing, and future trends of sharing strategies. The second section contains more than 10 chapters that discuss differing approaches to efficient spectrum sharing. The authors introduce a new coexistence and sharing scheme for multi-hop networks, describe the space-time sharing concept, introduce LTE-U, and examine sharing in broadcast and unicast environments. They then talk about different cooperation strategies to achieve mutual benefits for primary users (PU) and secondary users (SU), discuss protocols in a spectrum sharing context, and provide different game theory models between PUs and SUs. The third section explains how to model the interactions of PUs and SUs, using an efficient calculation method to determine spectrum availability. Additionally, this section explains how to use scheduling models to achieve efficient SU traffic delivery. The subject of the fourth section is MIMO-oriented design. It focuses on how directional antennas and MIMO antennas greatly enhance wireless network performance. The authors include a few chapters on capacity/rate calculations as well as beamforming issues under MIMO antennas. Power control is covered in the fifth section which also describes the interference-aware power allocation schemes among cognitive radio users and the power control schemes in cognitive radios. The sixth section provides a comprehensive look at security issues, including different types of spectrum sharing attacks and threats as well as corresponding countermeasure schemes. The seventh and final section covers issues pertaining to military applications and examines how the military task protects its data flows when sharing the spectrum with civilian applications.

Handbook of Research on Redesigning the Future of Internet Architectures Oct 22 2022 As the volume of global Internet traffic increases, the Internet is beginning to suffer from a broad spectrum of performance-degrading infrastructural limitations that threaten to jeopardize the continued growth of new, innovative services. In answer to this challenge, computer scientists seek to maintain the original design principles of the Internet while allowing for a more dynamic approach to the manner in which networks are designed and operated. The Handbook of Research on Redesigning the Future of Internet Architectures covers some of the hottest topics currently being debated by the Internet community at large, including Internet governance, privacy issues, service delivery automation, advanced networking schemes, and new approaches to Internet traffic-forwarding and path-computation mechanics. Targeting students, network-engineers, and technical strategists, this book seeks to provide a broad and comprehensive look at the next wave of revolutionary ideas poised to reshape the very foundation of the Internet as we know it.

IoT Fundamentals May 25 2020 Today, billions of devices are Internet-connected, IoT standards and protocols are stabilizing, and technical professionals must increasingly solve real problems with IoT technologies. Now, five leading Cisco IoT experts present the first comprehensive, practical reference for making IoT work. IoT Fundamentals brings together knowledge previously available only in white papers, standards documents, and other hard-to-find sources—or nowhere at all. The authors begin with a high-level overview of IoT and introduce key concepts needed to successfully design IoT solutions. Next, they walk through each key technology, protocol, and technical building block that combine into complete IoT solutions. Building on these essentials, they present several detailed use cases, including manufacturing, energy, utilities, smart+connected cities, transportation, mining, and public safety. Whatever your role or existing infrastructure, you'll gain deep insight what IoT applications can do, and what it takes to deliver them. Fully covers the principles and components of next-generation wireless networks built with

Cisco IOT solutions such as IEEE 802.11 (Wi-Fi), IEEE 802.15.4-2015 (Mesh), and LoRaWAN Brings together real-world tips, insights, and best practices for designing and implementing next-generation wireless networks Presents start-to-finish configuration examples for common deployment scenarios Reflects the extensive first-hand experience of Cisco experts

Managing Distributed Cloud Applications and Infrastructure Mar 23 2020 The emergence of the Internet of Things (IoT), combined with greater heterogeneity not only online in cloud computing architectures but across the cloud-to-edge continuum, is introducing new challenges for managing applications and infrastructure across this continuum. The scale and complexity is simply so complex that it is no longer realistic for IT teams to manually foresee the potential issues and manage the dynamism and dependencies across an increasing inter-dependent chain of service provision. This Open Access Pivot explores these challenges and offers a solution for the intelligent and reliable management of physical infrastructure and the optimal placement of applications for the provision of services on distributed clouds. This book provides a conceptual reference model for reliable capacity provisioning for distributed clouds and discusses how data analytics and machine learning, application and infrastructure optimization, and simulation can deliver quality of service requirements cost-efficiently in this complex feature space. These are illustrated through a series of case studies in cloud computing, telecommunications, big data analytics, and smart cities.

HCNA Networking Study Guide Feb 26 2023 This book is a study guide for Huawei (HCNA) certification. It has been written to help readers understand the principles of network technologies. It covers topics including network fundamentals, Ethernet, various protocols such as those used in routing, and Huawei's own VRP operating system—all essential aspects of HCNA certification. Presenting routing and switching basics in depth, it is a valuable resource for information and communications technology (ICT) practitioners, university students and network technology fans.

Fundamentals of 5G Mobile Networks Apr 16 2022 Fundamentals of 5G Mobile Networks provides an overview of the key features of the 5th Generation (5G) mobile networks, discussing the motivation for 5G and the main challenges in developing this new technology. This book provides an insight into the key areas of research that will define this new system technology paving the path towards future research and development. The book is multi-disciplinary in nature, and aims to cover a whole host of intertwined subjects that will predominantly influence the 5G landscape, including the future Internet, cloud computing, small cells and self-organizing networks (SONs), cooperative communications, dynamic spectrum management and cognitive radio, Broadcast-Broadband convergence , 5G security challenge, and green RF. This book aims to be the first of its kind towards painting a holistic perspective on 5G Mobile, allowing 5G stakeholders to capture key technology trends on different layering domains and to identify potential inter-disciplinary design aspects that need to be solved in order to deliver a 5G Mobile system that operates seamlessly.

Software Defined Networks Sep 28 2020 Software Defined Networks: A Comprehensive Approach, Second Edition provides in-depth coverage of the technologies collectively known as Software Defined Networking (SDN). The book shows how to explain to business decision-makers the benefits and risks in shifting parts of a network to the SDN model, when to integrate SDN technologies in a network, and how to develop or acquire SDN applications. In addition, the book emphasizes the parts of the technology that encourage opening up the network, providing treatment for alternative approaches to SDN that expand the definition of SDN as networking vendors adopt traits of SDN to their existing solutions. Since the first edition was published, the SDN market has matured, and is being gradually integrated and morphed into something more compatible with mainstream networking vendors. This book reflects these changes, with coverage of the OpenDaylight controller and its support for multiple southbound protocols, the Inclusion of NETCONF in discussions on controllers and devices, expanded

coverage of NFV, and updated coverage of the latest approved version (1.5.1) of the OpenFlow specification. Contains expanded coverage of controllers Includes a new chapter on NETCONF and SDN Presents expanded coverage of SDN in optical networks Provides support materials for use in computer networking courses

Network Management and Maintenance Jun 25 2020

The Digital Transformation of Logistics Oct 30 2020 The digital transformation is in full swing and fundamentally changes how we live, work, and communicate with each other. From retail to finance, many industries see an inflow of new technologies, disruption through innovative platform business models, and employees struggling to cope with the significant shifts occurring. This Fourth Industrial Revolution is predicted to also transform Logistics and Supply Chain Management, with delivery systems becoming automated, smart networks created everywhere, and data being collected and analyzed universally. The Digital Transformation of Logistics: Demystifying Impacts of the Fourth Industrial Revolution provides a holistic overview of this vital subject clouded by buzz, hype, and misinformation. The book is divided into three themed-sections: Technologies such as self-driving cars or virtual reality are not only electrifying science fiction lovers anymore, but are also increasingly presented as cure-all remedies to supply chain challenges. In The Digital Transformation of Logistics: Demystifying Impacts of the Fourth Industrial Revolution, the authors peel back the layers of excitement that have grown around new technologies such as the Internet of Things (IoT), 3D printing, Robotic Process Automation (RPA), Blockchain or Cloud computing, and show use cases that give a glimpse about the fascinating future we can expect. Platforms that allow businesses to centrally acquire and manage their logistics services disrupt an industry that has been relationship-based for centuries. The authors discuss smart contracts, which are one of the most exciting applications of Blockchain, Software as a Service (SaaS) offerings for freight procurement, where numerous data sources can be integrated and decision-making processes automated, and marine terminal operating systems as an integral node for shipments. In The Digital Transformation of Logistics: Demystifying Impacts of the Fourth Industrial Revolution, insights are shared into the cold chain industry where companies respond to increasing quality demands, and how European governments are innovatively responding to challenges of cross-border eCommerce. People are a vital element of the digital transformation and must be on board to drive change. The Digital Transformation of Logistics: Demystifying Impacts of the Fourth Industrial Revolution explains how executives can create sustainable impact and how competencies can be managed in the digital age - especially for sales executives who require urgent upskilling to remain relevant. Best practices are shared for organizational culture change, drawing on studies among senior leaders from the US, Singapore, Thailand, and Australia, and for managing strategic alliances with logistics service providers to offset risks and create cross-functional, cross-company transparency. The Digital Transformation of Logistics: Demystifying Impacts of the Fourth Industrial Revolution provides realistic insights, a ready-to-use knowledge base, and a working vocabulary about current activities and emerging trends of the Logistics industry. Intended readers are supply chain professionals working for manufacturing, trading, and freight forwarding companies as well as students and all interested parties.

The ComSoc Guide to Passive Optical Networks Dec 24 2022 Describes the major architectures, standards, and technologies of Passive Optical Networks (PONs) The ComSoc Guide to Passive Optical Networks provides readers with a concise explanation of the key features of Passive Optical Networks (PONs); the different types of PON architectures and standards; key issues of PON devices, management, and implementation; and the promising business opportunities in access networks. Written for a broad audience, ranging from developers to users, this indispensable book provides an understanding o the evolutionary path of PON access systems and their positioning with respect to the cable, copper, and wireless competitors for broadband access networks. In addition, The ComSoc Guide to Passive Optical Networks: Provides

brief, high-level overviews of the architectures and applications of Fiber-to-the-Home (FTTH) or Fiber-to-the-Curb (FTTC) access networks and the alternative HFC, subscriber line, and WiMAX access systems Awards readers with a clear understanding of what BPON, GPON, WDM-PON and EPON are and how they work, together with an introduction to their respective standards Carefully defines all acronyms and technical terms, making the book accessible to those who may not be specialists in this area Gives readers an appreciation of the last mile problems in telecommunications access networks, and the opportunities in optical-wireless integration

- Design Deployment And Performance Of 4G LTE Networks
- A Comprehensive Guide To 5G Security
- The Digital Transformation Of Logistics
- Software Defined Networks
- Cellular Communications
- Voice Data
- Network Management And Maintenance
- IoT Fundamentals
- India Telecom
- Managing Distributed Cloud Applications And Infrastructure
- Cloud Computing
- Broadband Communications Networks And Systems