

Emerging Le Networking Architectures

The twin revolutions of the global economy and omnipresent Internet connectivity have had a profound impact on architectural design. Geographical gaps and, in many cases, architecture's tie to the built world itself have evaporated in the face of our new networked society. Form is now conceptualized by architects, engineers, and artists as reflexive, contingent, and distributed. The collected essays in *Network Practices* capture this unique moment in the evolution of design, where crossing disciplines, spatial interactions, and design practices are all poised to be reimagined. With contributions by architects, artists, computer programmers, and theorists and texts by Reinhold Martin, Dagmar Richter, Michael Speaks, and others, *Network Practices* offers an interdisciplinary analysis of how art, science, and architecture are responding to rapidly changing mobile, wireless, and information embedded environments

How did openness become a foundational value for the networks of the twenty-first century? *Open Standards and the Digital Age* answers this question through an interdisciplinary history of information networks that pays close attention to the politics of standardization. For much of the twentieth century, information networks such as the monopoly Bell System and the American military's Arpanet were closed systems subject to centralized control. In the 1970s and 1980s however, engineers in the United States and Europe experimented with design strategies to create new digital networks. In the process, they embraced discourses of 'openness' to describe their ideological commitments to entrepreneurship, technological innovation, and participatory democracy. The rhetoric of openness has flourished - for example, in movements for open government, open source software, and open access publishing - but such rhetoric also obscures the ways the Internet and other 'open' systems still depend heavily on hierarchical forms of control.

This book explores the challenges and opportunities in exploiting cloud technologies for 5G, ranging from radio access network (RAN) to the evolved packet core (EPC). With a specific focus on cloud RAN and EPC, the text carefully explains the influence of recent network technologies such as software defined networking (SDN), visualization, and cloud technologies in the evolution of architecture for future mobile networks. The book discusses the causes, benefits and challenges of cloud RAN and its interplay with other evolving technologies for future mobile networks. Researchers and professionals involved in mobile technology or cloud computing will find this book a valuable resource. The text is also suitable for advanced-level students studying all types of networking.

A rapidly growing number of services and applications along with a dramatic shift in users' consumption models have made media networks an area of increasing importance. Do you know all that you need to know? Supplying you with a clear understanding of the technical and deployment challenges, *Media Networks: Architectures, Applications, and Standard*

Cultural heritage is a vital, multifaceted component of modern society. To better protect and promote the integrity of a culture, certain technologies have become essential tools. *The Handbook of Research on Emerging Technologies for Architectural and Archaeological Heritage* is an authoritative reference source for the latest scholarly research on the use of technological assistance for the preservation of architecture and archaeology in a global context. Focusing on various surveying technologies for the study, analysis, and protection of historical buildings, this book is ideally designed for professionals, researchers, upper-level students, and practitioners.

This book constitutes refereed proceedings of the First International Conference on Smart Technologies, Systems and Applications, held in Quito, Ecuador, in December 2019. The 27 full papers and 3 short papers presented were carefully reviewed and selected from 90 submissions. The papers of this volume are organized in topical sections on smart technologies; smart systems; smart trends and applications.

Technological revolutions have changed the field of architecture exponentially. The advent of new technologies and digital tools will continue to advance the work of architects globally, aiding in architectural design, planning, implementation, and restoration. *The Handbook of Research on Emerging Digital Tools for Architectural Surveying, Modeling, and Representation* presents expansive coverage on the latest trends and digital solutions being applied to architectural heritage. Spanning two volumes of research-based content, this publication is an all-encompassing reference source for scholars, IT professionals, engineers, architects, and business managers interested in current methodologies, concepts, and instruments being used in the field of architecture.

"Future Internet" is a worldwide hot topic. The Internet has become a critical infrastructure for business development and social interactions. However, the immense growth of the Internet has resulted in additional stresses on its architecture, resulting in a network difficult to monitor, understand, and manage due to its huge scale in terms of connected devices and actors (end users, content providers, equipment vendors, etc). This book presents and discusses the ongoing initiatives and experimental facilities for the creation of new Future Internet Architectures using alternative approaches like Clean Slate and Incremental improvements: It considers several possible internet network use scenarios that include seamless mobility, ad hoc networks, sensor networks, internet of things and new paradigms like content and user centric networks.

"Foqué establishes a general design theory based on the axioms of pragmatic thinking, a crucial unity between experience and the process of learning, and between conceptual thought and situational consciousness. *Building Knowledge* develops a theoretical framework and practical instrumentation to establish a knowledge base for the discipline of architecture. Part one of the book presents design methods as a third way of investigating reality apart from scientific methods or the conception of art. By describing the science-philosophical context, Foqué extensively analyses the nature of design activity and the design process, its inherent characteristics, and the differences between science and art. As such, it is argued that design processes have a research dimension an sich, which are essentially contextual and action driven. Foqué offers an integrated and comprehensive perspective to understand design activity both from an epistemological and practical standpoint. This results in an expanded discourse about the true nature of architectural design processes. Within this theoretical framework, part two explains how case study research is a primordial means to establish a knowledge base for the discipline and profession of architecture. From this premise, Foqué compares case study research in law, medicine and business administration and develops a practical and comprehensive approach to case studies in architecture. The methodology offers a solid and general framework wherein a consistent body of knowledge regarding architectural design processes can be generated. This promotes deeper insight in the complex relationship between context, product and process, which governs every design process on the one hand, and between the several stakeholders involved on the other hand."--Publisher.

This book (CCIS 839) constitutes the refereed proceedings of the First International Conference on Communication, Networks and Computings, CNC 2018, held in Gwalior, India, in March 2018. The 70 full papers were carefully reviewed and selected from 182 submissions. The papers are organized in topical sections on wired and wireless communication systems, high dimensional data representation and processing, networks and information security, computing techniques for efficient networks design, electronic circuits for communication system.

This book presents the proceedings of International Conference on Emerging Research in Computing, Information, Communication and Applications, ERCICA 2016. ERCICA provides an interdisciplinary forum for researchers, professional engineers and scientists, educators, and technologists to discuss, debate and promote research and technology in the upcoming areas of computing, information, communication and their applications. The book discusses these emerging research areas, providing a valuable resource for researchers and practicing engineers alike.

For the past couple of years, network automation techniques that include software-defined networking (SDN) and dynamic resource

allocation schemes have been the subject of a significant research and development effort. Likewise, network functions virtualization (NFV) and the foreseeable usage of a set of artificial intelligence techniques to facilitate the processing of customers' requirements and the subsequent design, delivery, and operation of the corresponding services are very likely to dramatically distort the conception and the management of networking infrastructures. Some of these techniques are being specified within standards developing organizations while others remain perceived as a "buzz" without any concrete deployment plans disclosed by service providers. An in-depth understanding and analysis of these approaches should be conducted to help internet players in making appropriate design choices that would meet their requirements as well as their customers. This is an important area of research as these new developments and approaches will inevitably reshape the internet and the future of technology. Design Innovation and Network Architecture for the Future Internet sheds light on the foreseeable yet dramatic evolution of internet design principles and offers a comprehensive overview on the recent advances in networking techniques that are likely to shape the future internet. The chapters provide a rigorous in-depth analysis of the promises, pitfalls, and other challenges raised by these initiatives, while avoiding any speculation on their expected outcomes and technical benefits. This book covers essential topics such as content delivery networks, network functions virtualization, security, cloud computing, automation, and more. This book will be useful for network engineers, software designers, computer networking professionals, practitioners, researchers, academicians, and students looking for a comprehensive research book on the latest advancements in internet design principles and networking techniques. This important work, now available in paperback, from Professor Geoffrey Broadbent, provides a clear analysis of the nature of many of today's design problems, identifying their causes in history and suggesting a basis for co-ordinated solutions. The author discusses 'picturesque' and 'formal' tendencies in modern architecture, relating them to parallels between philosophic thought and design theory through the ages. Using a wealth of international examples from around the world including America, UK, Italy, Germany and France and with over 250 photographs and illustrations, Emerging Concepts in Space Design offers a fascinating insight into the history and likely future directions of urban design.

In this book, the author addresses technologies that are being used in emerging cellular markets. These include GSM/EGPRS and CDMA which are being deployed at a rapid pace, while technologies such as UMTS (3G)/ HSPA (3.5G) which have started to find a place in these high growth markets, are also considered. The book examines other technologies including LTE (3.9G) which have already moved out of research labs into the commercial world. 2G-CDMA is widely used, while further developments, e.g. CDMA2000 are also finding acceptance in the commercial arena. IMS/Convergence is increasingly popular all over the world; UMA, which is deployed mostly in North America; and DVB which is gaining worldwide popularity, especially in South Asia, are all reviewed. Each chapter discusses a different technology and is structured into three parts. The technology is examined at an overview level, first explaining what the technology is and then considering the technical features of the technology. The chapter concludes by looking at the planning/implementation aspects of the technology. Key Features: Useful for all cellular industry professionals as provides an overview of the currently deployed technologies in mass scale, and the forthcoming technologies that are expected to make an impact in the future, such as 4th Generation Cellular Networks. One of the first books on the market to encompass all the major cellular technologies, as well as considering the design and implementation perspective. Wireless Technology will play a key role in uplifting the economies of the Emerging countries globally. Ashok Chandra, Wireless Advisor to Govt. of India

This book describes the concept of a Software Defined Mobile Network (SDMN), which will impact the network architecture of current LTE (3GPP) networks. SDN will also open up new opportunities for traffic, resource and mobility management, as well as impose new challenges on network security. Therefore, the book addresses the main affected areas such as traffic, resource and mobility management, virtualized traffics transportation, network management, network security and techno economic concepts. Moreover, a complete introduction to SDN and SDMN concepts. Furthermore, the reader will be introduced to cutting-edge knowledge in areas such as network virtualization, as well as SDN concepts relevant to next generation mobile networks. Finally, by the end of the book the reader will be familiar with the feasibility and opportunities of SDMN concepts, and will be able to evaluate the limits of performance and scalability of these new technologies while applying them to mobile broadband networks.

Mobile computing is defined as the union between humans and mobile devices that allows people to be connected to the Internet through a network in order to transmit and receive information. This book presents a vision of the present and future of mobile computing. It identifies and examines the most pressing research issues in the field. Comprising chapters by leading researchers and academics, this volume includes recent publications in key areas of interest, including Flying Ad-Hoc Networks (FANETs), Vehicular Ad-Hoc Networks (VANETs), 5G, energy-efficient networks, localization in mobile networks, algorithms of mobile core networks, user interfaces, metabolic health analysis, and many others. This volume is suitable as a text for graduate students and professionals in the industrial sector and general engineering areas. This book provides a preview of emerging wireless technologies and their architectural impact on the future mobile Internet. The reader will find an overview of architectural considerations for the mobile Internet, along with more detailed technical discussion of new protocol concepts currently being considered at the research stage. The first chapter starts with a discussion of anticipated mobile/wireless usage scenarios, leading to an identification of new protocol features for the future Internet. This is followed by several chapters that provide in-depth coverage of next-generation wireless standards, ad hoc and mesh network protocols, opportunistic delivery and delay tolerant networks, sensor network architectures and protocols, cognitive radio networks, vehicular networks, security and privacy, and experimental systems for future Internet research. Each of these contributed chapters includes a discussion of new networking requirements for the wireless scenario under consideration, architectural concepts and specific protocol designs, many still at research stage.

This volume contains the proceedings of the workshop held in March 1990 at Austin, Texas on Self-Organization, Emerging Properties and Learning. The workshop was co-sponsored by NATO Scientific Affairs Division, Solvay Institutes of Physics and Chemistry, the University of Texas at Austin and IC2 Institute at Austin. It gathered representatives from a large spectrum of scientific endeavour. The subject matter of self-organization extends over several fields such as hydrodynamics, chemistry, biology, neural networks and social sciences. Several key concepts are common to all these different disciplines. In general the self-organization processes in these fields are described in the framework of the nonlinear dynamics, which also governs the mechanisms underlying the learning processes. Because of this common language, it is expected that any progress in one area could benefit other fields, thus a beneficial cross fertilization may result. In last two decades many workshops and conferences had been organized in various specific fields dealing with self-organization and emerging properties of systems. The aim of the workshop in Austin was to bring together researchers from seemingly unrelated areas and interested in self-organization, emerging properties and learning capabilities of interconnected multi-unit systems. The hope was to initiate interesting exchange and lively discussions. The expectations of the organizers are materialized in this unusual collection of papers, which brings together in a single volume representative research from many related fields. Thus this volume gives to the reader a wider perspective over the generality and ramifications of the key concepts of self organization.

The Winter 2012 (vol. 14 no. 1) issue of the Nexus Network Journal is dedicated to the theme "Architecture, Systems Research and Computational Sciences". This is an outgrowth of the session by the same name which took place during the eighth international, interdisciplinary conference "Nexus 2010: Relationships between Architecture and Mathematics, held in Porto, Portugal, in June 2010. Today computer science is an integral part of even strictly historical investigations, such as those concerning the construction of vaults, where the computer is used to survey the existing building, analyse the data and draw the ideal solution. What the papers in this issue make especially

evident is that information technology has had an impact at a much deeper level as well: architecture itself can now be considered as a manifestation of information and as a complex system. The issue is completed with other research papers, conference reports and book reviews.

A Genealogy of Tropical Architecture traces the origins of tropical architecture to nineteenth century British colonial architectural knowledge and practices. It uncovers how systematic knowledge and practices on building and environmental technologies in the tropics were linked to military technologies, medical theories and sanitary practices, and were manifested in colonial building types such as military barracks, hospitals and housing. It also explores the various ways these colonial knowledge and practices shaped post-war techno scientific research and education in climatic design and modern tropical architecture. Drawing on the interdisciplinary scholarships on postcolonial studies, science studies, and environmental history, Jiat-Hwee Chang argues that tropical architecture was inextricably entangled with the socio-cultural constructions of tropical nature, and the politics of colonial governance and postcolonial development in the British colonial and post-colonial networks. By bringing to light new historical materials through formidable research and tracing the history of tropical architecture beyond what is widely considered today as its "founding moment" in the mid-twentieth century, this important and original book revises our understanding of colonial built environment. It also provides a new historical framework that significantly bears upon contemporary concerns with climatic design and sustainable architecture. This book is an essential resource for understanding tropical architecture and its various contemporary manifestations. Its in-depth discussion and path breaking insights will be invaluable to specialists, academics, students and practitioners.

This book introduces Content-Centric Networking (CCN), a networking paradigm that provides a simple and effective solution to the challenging demands of future wired and wireless communications. It provides an overview of the recent developments in the area of future internet technologies, bringing together the advancements that have been made in Information-Centric Networking (ICN) in general, with a focus on CCN. It begins with an introduction to the basics of CCN is followed by an overview of the current internet paradigm and its challenges. Next, an application perspective has been included, where the authors encompass the selected applications for CCN with recent refereed research and developments. These applications include Internet of Things (IoT), Smart Grid, Vehicular Ad hoc Networks (VANETs), and Wireless Sensor Networks (WSNs). The book is a useful reference source for practising researchers, and can be used as supporting material for undergraduate and graduate level courses in computer science and electrical engineering.

From cloud computing to data analytics, society stores vast supplies of information through wireless networks and mobile computing. As organizations are becoming increasingly more wireless, ensuring the security and seamless function of electronic gadgets while creating a strong network is imperative. Advanced Methodologies and Technologies in Network Architecture, Mobile Computing, and Data Analytics highlights the challenges associated with creating a strong network architecture in a perpetually online society. Readers will learn various methods in building a seamless mobile computing option and the most effective means of analyzing big data. This book is an important resource for information technology professionals, software developers, data analysts, graduate-level students, researchers, computer engineers, and IT specialists seeking modern information on emerging methods in data mining, information technology, and wireless networks.

Networks of the Future Architectures, Technologies, and Implementations CRC Press

Network on Chip (NoC) addresses the communication requirement of different nodes on System on Chip. The bio-inspired algorithms improve the bandwidth utilization, maximize the throughput and reduce the end-to-end latency and inter-flit arrival time. This book exclusively presents in-depth information regarding bio-inspired algorithms solving real world problems focussing on fault-tolerant algorithms inspired by the biological brain and implemented on NoC. It further documents the bio-inspired algorithms in general and more specifically, in the design of NoC. It gives an exhaustive review and analysis of the NoC architectures developed during the last decade according to various parameters. Key Features: Covers bio-inspired solutions pertaining to Network-on-Chip (NoC) design solving real world examples Includes bio-inspired NoC fault-tolerant algorithms with detail coding examples Lists fault-tolerant algorithms with detailed examples Reviews basic concepts of NoC Discusses NoC architectures developed-to-date

Several emerging phenomena and technologies, such as the increasing availability of open source software and the continuing evolution of distributed computing, are introducing a new dynamic into information system development. Emerging Spatial Information Systems and Applications presents innovative spatial information systems that have been developed for a specific problem or decision-making situation and discusses key concepts and theories underlying current spatial information systems, as well as technology trends and emerging concepts that may impact spatial information system development and applications.

With the rise of mobile and wireless technologies, more sustainable networks are necessary to support communication. These next-generation networks can now be utilized to extend the growing era of the Internet of Things. Enabling Technologies and Architectures for Next-Generation Networking Capabilities is an essential reference source that explores the latest research and trends in large-scale 5G technologies deployment, software-defined networking, and other emerging network technologies.

Featuring research on topics such as data management, heterogeneous networks, and spectrum sensing, this book is ideally designed for computer engineers, technology developers, network administrators and researchers, professionals, and graduate-level students seeking coverage on current and future network technologies.

Explore foundational concepts in blockchain theory with an emphasis on recent advances in theory and practice In Wireless Blockchain: Principles, Technologies and Applications, accomplished researchers and authors Bin Cao, Lei Zhang, Mugen Peng, and Muhammad Ali Imran deliver a robust and accessible exploration of recent developments in the theory and practice of blockchain technology, systems, and potential application in a variety of industrial sectors, including manufacturing, entertainment, public safety, telecommunications, public transport, healthcare, financial services, automotive, and energy utilities. The book presents the concept of wireless blockchain networks with different network topologies and communication protocols for various commonly used blockchain applications. You'll discover how these variations and how communication networks affect blockchain consensus performance, including scalability, throughput, latency, and security levels. You'll learn the state-of-the-art in blockchain technology and find insights on how blockchain runs and co-works with existing systems, including 5G, and how blockchain runs as a service to support all vertical sectors efficiently and effectively. Readers will also benefit from the inclusion of: A thorough introduction to the Byzantine Generals problem, the fundamental theory of distributed system security and the foundation of blockchain technology An overview of advances in blockchain systems, their history, and likely future trends Practical discussions of Proof-of-Work systems as well as various Proof-of-X alternatives, including Proof-of-Stake, Proof-of-Importance, and Proof-of-Authority A concise examination of smart contracts, including trusted transactions, smart contract functions, design processes, and related applications in 5G/B5G A treatment of the theoretical relationship between communication networks and blockchain Perfect for electrical engineers, industry professionals, and students and researchers in electrical engineering, computer science, and mathematics, Wireless Blockchain: Principles, Technologies and Applications will also earn a place in the libraries of communication and computer system stakeholders, regulators, legislators, and research agencies.

With the current advances in technology innovation, the field of medicine and healthcare is rapidly expanding and, as a result, many different areas of human health diagnostics, treatment and care are emerging. Wireless technology is getting faster and 5G mobile technology allows the Internet of Medical Things (IoMT) to greatly improve patient care and more effectively prevent illness from developing. This book provides an overview and review of the current and anticipated changes in medicine and healthcare due to new technologies and faster communication between users and devices. This groundbreaking book presents state-of-the-art chapters on many subjects including: A review of the implications of VR and AR healthcare applications A review of current augmenting dental care An overview of typical human-computer interaction (HCI) that can help inform the development of user interface designs and novel ways to evaluate human behavior to responses in virtual reality (VR) and other new technologies A review of telemedicine technologies Building empathy in young children using augmented reality AI technologies for mobile health of stroke monitoring & rehabilitation robotics control Mobile doctor brain AI App An artificial intelligence mobile cloud computing tool Development of a robotic teaching aid for disabled children Training system design of lower limb rehabilitation robot based on virtual reality

With the ubiquitous diffusion of the IoT, Cloud Computing, 5G and other evolved wireless technologies into our daily lives, the world will see the Internet of the future expand ever more quickly. Driving the progress of communications and connectivity are mobile and wireless technologies, including traditional WLANs technologies and low, ultra-power, short and long-range technologies. These technologies facilitate the communication among the growing number of connected devices, leading to the generation of huge volumes of data. Processing and analysis of such "big data" brings about many opportunities, as well as many challenges, such as those relating to efficient power consumptions, security, privacy, management, and quality of service. This book is about the technologies, opportunities and challenges that can drive and shape the networks of the future. Written by established international researchers and experts, *Networks of the Future* answers fundamental and pressing research challenges in the field, including architectural shifts, concepts, mitigation solutions and techniques, and key technologies in the areas of networking. The book starts with a discussion on Cognitive Radio (CR) technologies as promising solutions for improving spectrum utilization, and also highlights the advances in CR spectrum sensing techniques and resource management methods. The second part of the book presents the latest developments and research in the areas of 5G technologies and Software Defined Networks (SDN). Solutions to the most pressing challenges facing the adoption of 5G technologies are also covered, and the new paradigm known as Fog Computing is examined in the context of 5G networks. The focus next shifts to efficient solutions for future heterogeneous networks. It consists of a collection of chapters that discuss self-healing solutions, dealing with Network Virtualization, QoS in heterogeneous networks, and energy efficient techniques for Passive Optical Networks and Wireless Sensor Networks. Finally, the areas of IoT and Big Data are discussed, including the latest developments and future perspectives of Big Data and the IoT paradigms.

Splintering Urbanism makes an international and interdisciplinary analysis of the complex interactions between infrastructure networks and urban spaces. It delivers a new and powerful way of understanding contemporary urban change, bringing together discussions about: *globalization and the city *technology and society *urban space and urban networks *infrastructure and the built environment *developed, developing and post-communist worlds. With a range of case studies, illustrations and boxed examples, from New York to Jakarta, Johannesburg to Manila and Sao Paulo to Melbourne, *Splintering Urbanism* demonstrates the latest social, urban and technological theories, which give us an understanding of our contemporary metropolis.

C-RAN and virtualized Small Cell technology poses several major research challenges. These include dynamic resource allocation, self-configuration in the baseband pool, high latency in data transfer between radio unit and baseband unit, the cost of data delivery, high volume of data in the network, software networking aspects, potential energy savings, security concerns, privacy of user's personal data at a remote place, limitations of virtualized environment, etc. This book provides deeper insights into the next generation RAN architecture and surveys the coexistence of SDN, C-RAN and Small Cells solutions proposed in the literature at different levels.

The more integrated technology becomes in our everyday lives and businesses, the more vital it grows that its applications are utilized in an ethical and appropriate way. *Ethical Governance of Emerging Technologies Development* combines multiple perspectives on ethical backgrounds, theories, and management approaches when implementing new technologies into an environment. Understanding the ethical implications associated with utilizing new advancements in technology is useful for professionals, researchers, and graduate students interested in this growing area of research.

"This volume offers intriguing applications, reviews and additions to the methodology of intelligent computing, presenting the emerging trends of state-of-the-art intelligent systems and their practical applications"--Provided by publisher.

This Springer Brief presents the architectures of small-cell networks and recent advances in interference management. The key challenges and values of small cells are first introduced, followed by the reviews of various small-cell architectures and interference management techniques in both heterogeneous CDMA and heterogeneous OFDMA small-cell networks. New adaptive power control and dynamic spectrum access techniques are discussed to promote a harmonized coexistence of diverse network entities in both 3G and 4G small-cell networks. Analytically devised from optimization and game theories, autonomous solutions are shown to effectively manage the intra-tier and cross-tier interferences in small cells. Informative and practical, this Springer Brief is designed for researchers and professionals working in networking and resource management. The content is also valuable for advanced-level students interested in network communications and power allocation.

With the growing popularity of wireless networks in recent years, the need to increase network capacity and efficiency has become more prominent in society. This has led to the development and implementation of heterogeneous networks. *Resource Allocation in Next-Generation Broadband Wireless Access Networks* is a comprehensive reference source for the latest scholarly research on upcoming 5G technologies for next generation mobile networks, examining the various features, solutions, and challenges associated with such advances. Highlighting relevant coverage across topics such as energy efficiency, user support, and adaptive multimedia services, this book is ideally designed for academics, professionals, graduate students, and professionals interested in novel research for wireless innovations.

Cloud Data Center Network Architectures and Technologies has been written with the support of Huawei's vast technical knowledge and experience in the data center network (DCN) field, as well as its understanding of customer service requirements. This book describes in detail the architecture design, technical implementation, planning and design, and deployment suggestions for cloud DCNs based on the service challenges DCNs encounter. It starts by describing the overall architecture and technical evolution of DCNs, with the aim of helping readers understand the development of DCNs. It then proceeds to explain the design and implementation of cloud DCNs, including the service model of a single data center (DC), construction of physical and logical networks of DCs, construction of multiple DCNs, and security

solutions of DCs. Next, this book dives deep into practices of cloud DCN deployment based on real-world cases to help readers better understand how to build cloud DCNs. Finally, this book introduces DCN openness and some of the hottest forward-looking technologies. In summary, you can use this book as a reference to help you to build secure, reliable, efficient, and open cloud DCNs. It is intended for technical professionals of enterprises, research institutes, information departments, and DCs, as well as teachers and students of computer network-related majors in colleges and universities. Authors Lei Zhang Mr. Zhang is the Chief Architect of Huawei's DCN solution. He has more than 20 years' experience in network product and solution design, as well as a wealth of expertise in product design and development, network planning and design, and network engineering project implementation. He has led the design and deployment of more than 10 large-scale DCNs for Fortune Global 500 companies worldwide. Le Chen Mr. Chen is a Huawei DCN Solution Documentation Engineer with eight years' experience in developing documents related to DCN products and solutions. He has participated in the design and delivery of multiple large-scale enterprise DCNs. Mr. Chen has written many popular technical document series, such as DCN Handbook and BGP Topic. Many books have covered the topics of architecture, materials and technology. 'New Architecture and Technology' is the first to explore the interrelation between these three subjects. It illustrates the impact of modern technology and materials on architecture. The book explores the technical progress of building showing how developments, both past and present, are influenced by design methods. It provides a survey of contemporary architecture, as affected by construction technology. It also explores aspects of building technology within the context of general industrial, social and economic developments. The reader will acquire a vocabulary covering the entire range of structure types and learn a new approach to understanding the development of design.

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