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# Advanced Content Delivery Streaming And Cloud Services Wiley Series On Parallel And Distributed Computing

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IPTV Multimedia Networks

Mobile Internet Monthly Newsletter July 2010

Advanced Methodologies and Technologies in Network Architecture, Mobile Computing, and Data Analytics

Multimedia over IP and Wireless Networks

IPTV Delivery Networks

Next Generation Content Delivery Infrastructures: Emerging Paradigms and Technologies

Web Content Delivery

Wireless Radio-Frequency Standards and System Design: Advanced Techniques

Handbook of Mobile Broadcasting

SCADA Security

Biometrics: Concepts, Methodologies, Tools, and Applications

Fog and Edge Computing

Large-scale Distributed Systems and Energy Efficiency

Content Delivery Networks

Big Data

Advanced Content Delivery, Streaming, and Cloud Services

Measurement, Modelling and Evaluation of Dependable Computer and Communication Systems

Programming Multicore and Many-core Computing Systems

Design Innovation and Network Architecture for the Future Internet

Multimedia Broadcasting and Multicasting in Mobile Networks

The Technology of Video and Audio Streaming

3D Visual Content Creation, Coding and Delivery

Handbook of Research on Emergent Applications of Optimization Algorithms

IPTV Monthly Newsletter November 2009

Flash Builder 4 and Flex 4 Bible

Cooperation and Resource Allocation in Wireless Networking towards the IoT

Advanced Content Delivery, Streaming, and Cloud Services

Advances in Computers

Advanced Network Programming - Principles and Techniques

Content Delivery Networks

Emerging Research on Networked Multimedia Communication Systems

Advances in Wireless, Mobile Networks and Applications

Encyclopedia of Information Science and Technology, Fourth Edition  
IPTV Monthly Newsletter July 2010  
Multimedia Networks  
Internet Computing  
Cloud Computing  
Advances in Mobile Computing and Communications  
Activity Learning

*Advanced  
Content  
Delivery  
Streaming And  
Cloud Services  
Wiley Series  
On Parallel  
And  
Distributed  
Computing*

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## **MALONE JAIDYN**

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### **IPTV Multimedia**

#### **Networks IGI Global**

Examines the design and use of Intrusion Detection Systems (IDS) to secure Supervisory Control and Data Acquisition (SCADA) systems Cyber-attacks on SCADA systems—the control system architecture that uses computers, networked data communications, and graphical user interfaces for high-level process supervisory management—can lead to costly financial consequences or even result in loss of life. Minimizing potential risks and responding to malicious actions requires innovative approaches for monitoring SCADA systems and protecting them from targeted attacks. SCADA Security: Machine Learning Concepts for Intrusion

Detection and Prevention is designed to help security and networking professionals develop and deploy accurate and effective Intrusion Detection Systems (IDS) for SCADA systems that leverage autonomous machine learning. Providing expert insights, practical advice, and up-to-date coverage of developments in SCADA security, this authoritative guide presents a new approach for efficient unsupervised IDS driven by SCADA-specific data. Organized into eight in-depth chapters, the text first discusses how traditional IT attacks can also be possible against SCADA, and describes essential SCADA concepts, systems, architectures, and main components. Following chapters introduce various SCADA security frameworks and approaches, including evaluating security with virtualization-based SCADAVT, using SDAD to extract proximity-based detection, finding a global

and efficient anomaly threshold with GATUD, and more. This important book: Provides diverse perspectives on establishing an efficient IDS approach that can be implemented in SCADA systems Describes the relationship between main components and three generations of SCADA systems Explains the classification of a SCADA IDS based on its architecture and implementation Surveys the current literature in the field and suggests possible directions for future research SCADA Security: Machine Learning Concepts for Intrusion Detection and Prevention is a must-read for all SCADA security and networking researchers, engineers, system architects, developers, managers, lecturers, and other SCADA security industry practitioners. [Mobile Internet Monthly Newsletter July 2010](#) Springer While other books on the market provide limited coverage of advanced

CDNs and streaming technologies, concentrating solely on the fundamentals, this book provides an up-to-date comprehensive coverage of the state-of-the-art advancements in CDNs, with a special focus on Cloud-based CDNs. The book includes CDN and media streaming basics, performance models, practical applications, and business analysis. It features industry case studies, CDN applications, and open research issues to aid practitioners and researchers, and a market analysis to provide a reference point for commercial entities. The book covers Adaptive Bitrate Streaming (ABR), Content Delivery Cloud (CDC), Web Acceleration, Front End Optimization (FEO), Transparent Caching, Next Generation CDNs, CDN Business Intelligence and more. Provides an in-depth look at Cloud-based CDNs Includes CDN and streaming media basics and tutorials Aimed to instruct systems architects, practitioners, product developers, and researchers Material is divided into introductory subjects, advanced content, and specialist areas

Advanced Methodologies

and Technologies in Network Architecture, Mobile Computing, and Data Analytics IGI Global

\* Learn the end-to-end process, starting with capture from a video or audio source through to the consumer's media player \* A quick-start guide to streaming media technologies \* How to monetize content and protect revenue with digital rights management For broadcasters, web developers, project managers implementing streaming media systems, David Austerberry shows how to deploy the technology on your site, from video and audio capture through to the consumer's media player. The book first deals with Internet basics and gives a thorough coverage of telecommunications networks and the last mile to the home. Video and audio formats are covered, as well as compression standards including Windows Media and MPEG-4. The book then guides you through the streaming process, showing in-depth how to encode audio and video. The deployment of media servers, live webcasting and how the stream is displayed by the consumer's media player are also covered. A final

section on associated technologies illustrates how you can protect your revenue sources with digital rights management, looks at content delivery networks and provides examples of successful streaming applications. The supporting website, [www.davidausterberry.com/streaming.html](http://www.davidausterberry.com/streaming.html), offers updated links to sources of information, manufacturers and suppliers. David Austerberry is co-owner of the new media consultancy, Informed Sauce. He has worked with streaming media since the late nineties. Before that, he has been product manager for a number of broadcast equipment manufacturers, and formerly had many years with a leading broadcaster.

**Multimedia over IP and Wireless Networks**  
Springer Science & Business Media  
Radio-frequency (RF) integrated circuits in CMOS technology are gaining increasing popularity in the commercial world, and CMOS technology has become the dominant technology for applications such as GPS

receivers, GSM cellular transceivers, wireless LAN, and wireless short-range personal area networks based on IEEE 802.15.1 (Bluetooth) or IEEE 802.15.4 (ZigBee) standards. Furthermore, the increasing interest in wireless technologies and the widespread of wireless communications has prompted an ever increasing demand for radio frequency transceivers. *Wireless Radio-Frequency Standards and System Design: Advanced Techniques* provides perspectives on radio-frequency circuit and systems design, covering recent topics and developments in the RF area. Exploring topics such as LNA linearization, behavioral modeling and co-simulation of analog and mixed-signal complex blocks for RF applications, integrated passive devices for RF-ICs and baseband design techniques and wireless standards, this is a comprehensive reference for students as well as practicing professionals. *IPTV Delivery Networks* CRC Press  
Advanced Content Delivery, Streaming, and Cloud Services John Wiley & Sons  
*Next Generation Content*

*Delivery Infrastructures: Emerging Paradigms and Technologies* Information Gatekeepers, Inc  
A guide to the current technologies related to the delivery process for both live and on-demand services within IPTV delivery networks *IPTV Delivery Networks* is an important resource that offers an in-depth discussion to the IPTV (Internet Protocol Television) delivery networks for both live and on demand IPTV services. This important book also includes a review of the issues and challenges surrounding the delivery of IPTV over various emerging networking and communications technologies. The authors — an international team of experts — introduce a framework for delivery network applicable for live and video-on-demand services. They review the fundamental issues of IPTV delivery networks and explore the QoS (Quality of Service) issue for IPTV delivery networks that highlights the questions of security and anomaly detection as related to quality. *IPTV Delivery Networks* also contains a discussion of the mobility issues and next-generation delivery

networks. This guide captures the latest available and usable technologies in the field and: Explores the technologies related to delivery process for both live (real time) and on demand services in highly accessible terms Includes information on the history, current state and future of IPTV delivery Reviews all the aspects of delivery networks including storage management, resource allocation, broadcasting, video compression, QoS and QoE Contains information on current applications including Netflix (video on demand), BBC iPlayer (time-shifted IPTV) and live (real time) streaming Written for both researchers and industrial experts in the field of IPTV delivery networks. *IPTV Delivery Networks* is a groundbreaking book that includes the most current information available on live and on demand IPTV services. *Web Content Delivery* Morgan Kaufmann  
The transportation of multimedia over the network requires timely and errorless transmission much more strictly than other data. This had led to special protocols and to special treatment in

multimedia applications (telephony, IP-TV, streaming) to overcome network issues. This book begins with an overview of the vast market combined with the user's expectations. The basic mechanisms of the audio/video coding (H.26x etc.) are explained to understand characteristics of the generated network traffic. Further chapters treat common specialized underlying IP network functions which cope with multimedia data in conjunction with special time adaptation measures. Based on those standard functions these chapters can treat uniformly SIP, H.248, High-End IP-TV, Webcast, Signage etc. A special section is devoted to home networks which challenge high-end service delivery due to possibly unreliable management. The whole book treats concepts described in accessible IP-based standards and which are implemented broadly. The book is aimed at graduate students/practitioners with good basic knowledge in computer networking. It provides the reader with all concepts of currently used IP technologies of how to deliver multimedia

efficiently to the end user. *Wireless Radio-Frequency Standards and System Design: Advanced Techniques* IGI Global

This book constitutes the refereed proceedings of the Third International Conference on Wireless, Mobile Networks and Applications, WiMoA 2011, and the First International Conference on Computer Science, Engineering and Applications, ICCSEA 2011, held in Dubai, United Arab Emirates, in May 2011. The book is organized as a collection of papers from WiMoA 2011 and ICCSEA 2011. The 8 revised full papers presented in the WiMoA 2011 part were carefully reviewed and selected from 63 submissions. The 20 revised full papers presented in the ICCSEA 2011 part were carefully reviewed and selected from 110 submissions.

**Handbook of Mobile Broadcasting** Elsevier Advances in Computers, Volume 123 presents innovations in computer hardware, software, theory, design and applications, with this updated volume including new chapters on Downlink Resource Allocations of Satellite-Airborne-Terrestrial Networks Integration, Evaluating Software Testing

Techniques: A Systematic Mapping Study, The Screening Phase in Systematic Reviews: Can we speed up the process?, A Survey on Cloud-Based Video Streaming Services, and User Behavior-Ensemble Learning based Improving QoE Fairness in HTTP Adaptive Streaming over SDN approach.

Contains novel subject matter that is relevant to computer science Includes the expertise of contributing authors Presents an easy to comprehend writing style

### **SCADA Security**

Advanced Content Delivery, Streaming, and Cloud Services Programming multi-core and many-core computing systems Sabri Pillana, Linnaeus University, Sweden Fatos Xhafa, Technical University of Catalonia, Spain Provides state-of-the-art methods for programming multi-core and many-core systems The book comprises a selection of twenty two chapters covering: fundamental techniques and algorithms; programming approaches; methodologies and frameworks; scheduling and management; testing and evaluation methodologies; and case studies for programming



the field of 3D multimedia delivery services and applications are covered. The international group of contributors also explore the research problems and challenges in the field of immersive visual communications, in order to identify research directions with substantial economic and social impact. 3D Visual Content Creation, Coding and Delivery provides valuable information to engineers and computer scientists developing novel products and services with emerging 3D multimedia technologies, by discussing the advantages and current limitations that need to be addressed in order to develop their products further. It will also be of interest to students and researchers in the field of multimedia services and applications, who are particularly interested in advances bringing significant potential impact on future technological developments.

*Large-scale Distributed Systems and Energy Efficiency* IGI Global

A complete and thorough reference for developers on the new Flex 4 platform Create desktop applications that behave identically on Windows, Mac OS X, and Linux with

Adobe's new Flash Builder 4 platform and this in-depth guide. The book's tutorials and explanations walk you step-by-step through Flash Builder's new, faster tools; the new framework for generating code; how to connect to popular application servers; upgrading from Flex 3; and much more. Shows you how to create rich applications for the Web and desktop with the very latest version of Flex, with detailed coverage for both new and veteran Flex application developers Walks you through Flex basics; upgrading from Flex 3; how to create desktop applications with AIR; and integrating Flex applications with the most popular application servers, including ColdFusion, ASP.NET, and PHP Includes extensive code samples of common tasks that you can use to jump-start your development projects Flex your development muscles with the Flex 4 and this comprehensive guide.

**Content Delivery**

**Networks** John Wiley & Sons

"Content Delivery Networks" enables the readers to understand the basics, to identify the underlying technology, to

summarize their knowledge on concepts, ideas, principles and various paradigms which span on broad CDNs areas. Therefore, aspects of CDNs in terms of basics, design process, practice, techniques, performances, platforms, applications, and experimental results have been presented in a proper order.

Fundamental methods, initiatives, significant research results, as well as references for further study have also been provided. Comparison of different design and development approaches are described at the appropriate places so that new researchers as well as advanced practitioners can use the CDNs evaluation as a research roadmap. All the contributions have been reviewed, edited, processed, and placed in the appropriate order to maintain consistency so that any reader irrespective of their level of knowledge and technological skills in CDNs would get the most out of it. The book is organized into three parts, namely, Part I: CDN Fundamentals; Part II: CDN Modeling and Performance; and Part III: Advanced CDN Platforms

and Applications. The organization ensures the smooth flow of material as successive chapters build on prior ones.

Big Data Intl. Engineering Consortiu

The Internet of Things (IoT) should be able to react with minimal human intervention and contribute to the Artificial Intelligence (AI) era requiring real-time and scalable operation under heterogeneous network infrastructures. This thesis investigates how cooperation and allocation of resources can contribute to the evolution of future wireless networks supporting the IoT. First, we examine how to allocate resources to IoT services which run on devices equipped with multiple network interfaces. The resources are heterogeneous and not interchangeable, and their allocation to a service can be split among different interfaces. We formulate an optimization model for this allocation problem, prove its complexity, and derive two heuristic algorithms to approximate the solution in large instances of the problem. The concept of virtualization is promising towards addressing the

heterogeneity of IoT resources by providing an abstraction layer between software and hardware.

Network function virtualization (NFV) decouples traditional network operations such as routing from proprietary hardware platforms and implements them as software entities known as virtualized network functions (VNFs). In the second paper, we study how VNF demands can be allocated to Virtual Machines (VMs) by considering the completion-time tolerance of the VNFs. We prove that the problem is NP-complete and devise a subgradient optimization algorithm to provide near-optimal solutions. Our numerical results demonstrate the effectiveness of our algorithm compared to two benchmark algorithms. Furthermore, we explore the potential of using intermediate nodes, the so-called relays, in IoT networks. In the third paper, we study a multi-user random-access network with a relay node assisting users in transmitting their packets to a destination node. We provide analytical expressions for the performance of the relay's queue and the

system throughput. We optimize the relay's operation parameters to maximize the network-wide throughput while maintaining the relay's queue stability. A stable queue at relay guarantees finite delay for the packets. Furthermore, we study the effect of the wireless links' signal-to-interference-plus-noise ratio (SINR) threshold and the self-interference (SI) cancellation on the per-user and network-wide throughput. Additionally, caching at the network edge has recently emerged as an encouraging solution to offload cellular traffic and improve several performance metrics of the network such as throughput, delay and energy efficiency. In the fourth paper, we study a wireless network that serves two types of traffic: cacheable and non-cacheable traffic. In the considered system, a wireless user with cache storage requests cacheable content from a data center connected with a wireless base station. The user can be assisted by a pair of wireless helpers that exchange non-cacheable content as well. We devise the system throughput and the delay

experienced by the user and provide numerical results that demonstrate how they are affected by the non-cacheable packet arrivals, the availability of caching helpers, the parameters of the caches, and the request rate of the user. Finally, in the last paper, we consider a time-slotted wireless system that serves both cacheable and non-cacheable traffic with the assistance of a relay node. The latter has storage capabilities to serve both types of traffic. We investigate how allocating the storage capacity to cacheable and non-cacheable traffic affects the system throughput. Our numerical results provide useful insights into the system throughput e.g., that it is not necessarily beneficial to increase the storage capacity for the non-cacheable traffic to realize better throughput at the non-cacheable destination node.

### **Advanced Content Delivery, Streaming, and Cloud Services**

Taylor & Francis

This book constitutes the refereed proceedings of the 19th International Conference on Computer Networks, CN 2012, held in Szczyrk, Poland, in June 2012. The 48 revised full

papers presented were carefully reviewed and selected for inclusion in the book. The papers address subjects such as new and emerging technologies related to networking fields; fundamentals of computer networks; internet and internetworking; security and safety issues; industrial computer networks; wireless systems and sensor networks; the theory of queues and queuing networks; applications and computer networks usage.

### Measurement, Modelling and Evaluation of Dependable Computer and Communication Systems

Linköping University Electronic Press  
Big Data: Principles and Paradigms captures the state-of-the-art research on the architectural aspects, technologies, and applications of Big Data. The book identifies potential future directions and technologies that facilitate insight into numerous scientific, business, and consumer applications. To help realize Big Data's full potential, the book addresses numerous challenges, offering the conceptual and technological solutions for tackling them. These

challenges include life-cycle data management, large-scale storage, flexible processing infrastructure, data modeling, scalable machine learning, data analysis algorithms, sampling techniques, and privacy and ethical issues. Covers computational platforms supporting Big Data applications  
Addresses key principles underlying Big Data computing  
Examines key developments supporting next generation Big Data platforms  
Explores the challenges in Big Data computing and ways to overcome them  
Contains expert contributors from both academia and industry

### **Programming Multicore and Many-core Computing Systems**

CRC Press

The definitive guide to developing robust content delivery networks  
This book examines the real-world engineering challenges of developing robust content delivery networks (CDNs) and provides the tools required to overcome those challenges and to ensure high-quality content delivery that fully satisfies operators' and consumers' commercial objectives. It is informed by the author's two

decades of experience building and delivering large, mission-critical live video, webcasts, and radio streaming, online and over private IP networks. Following an overview of the field, the book cuts to the chase with in-depth discussions—laced with good-natured humor—of a wide range of design considerations for different network topologies. It begins with a description of the author's own requirement filtration processes. From there it moves on to initial sketches, through considerations of stakeholder roles and responsibilities, to the complex challenges of managing change in established teams. Agile versus waterfall considerations within large blue chip companies, security, commercial models, and value chain alignment are explored in detail. Featured throughout the book are numerous "what if" scenarios that help provide a clear picture of the wide spectrum of practical contexts for which readers may be tasked with building and implementing a CDN. In addition, the book: Discusses delivery of live, catch-up, scheduled on-

demand, TVOD and SVOD Offers insights into the decisions that can be made when architecting a content distribution system over IP-based networks Covers CDN topologies, including Edge-Caching, Streaming-Splitting, Pure-Play, Operator, Satellite, and Hybrid Examines computer hosting and orchestration for dedicated appliances and virtualization Includes real-world cases covering everything from IETF, regulatory considerations, and policy formation, to coding, hardware vendors, and network operators Considers the future of CDN technologies and the market forces driving its evolution Written by a back-room engineer for back-room engineers, Content Delivery Networks gets readers up to speed on the real-world challenges they can face as well as tried-and-true strategies for addressing those challenges in order to ensure the delivery of the high-quality content delivery networks that clients demand and users expect.

**Design Innovation and Network Architecture for the Future Internet**

John Wiley & Sons  
In recent years, our world

has experienced a profound shift and progression in available computing and knowledge sharing innovations. These emerging advancements have developed at a rapid pace, disseminating into and affecting numerous aspects of contemporary society. This has created a pivotal need for an innovative compendium encompassing the latest trends, concepts, and issues surrounding this relevant discipline area. During the past 15 years, the Encyclopedia of Information Science and Technology has become recognized as one of the landmark sources of the latest knowledge and discoveries in this discipline. The Encyclopedia of Information Science and Technology, Fourth Edition is a 10-volume set which includes 705 original and previously unpublished research articles covering a full range of perspectives, applications, and techniques contributed by thousands of experts and researchers from around the globe. This authoritative encyclopedia is an all-encompassing, well-established reference source that is ideally

designed to disseminate the most forward-thinking and diverse research findings. With critical perspectives on the impact of information science management and new technologies in modern settings, including but not limited to computer science, education, healthcare, government, engineering, business, and natural and physical sciences, it is a pivotal and relevant source of knowledge that will benefit every professional within the field of information science and technology and is an invaluable addition to every academic and corporate

library.

**Multimedia  
Broadcasting and  
Multicasting in Mobile  
Networks** John Wiley &

Sons  
Security and authentication issues are surging to the forefront of the research realm in global society. As technology continues to evolve, individuals are finding it easier to infiltrate various forums and facilities where they can illegally obtain information and access. By implementing biometric authentications to these forums, users are able to prevent attacks on their privacy and security.

Biometrics: Concepts, Methodologies, Tools, and Applications is a multi-volume publication highlighting critical topics related to access control, user identification, and surveillance technologies. Featuring emergent research on the issues and challenges in security and privacy, various forms of user authentication, biometric applications to image processing and computer vision, and security applications within the field, this publication is an ideal reference source for researchers, engineers, technology developers, students, and security specialists.