Internet Multimedia Communications Using Sip A Modern Approach Including Javai 1 2 Practice The Morgan Kaufmann Series In Networking

SIP HandbookGuide to Voice and Video over IPSIPReal-Time Communication with WebRTCIP for 4GHandbook on Networked Multipoint Multimedia Conferencing and Multistream Immersive Telepresence using SIPIP TelephonyIntroduction to Multimedia CommunicationsMultimedia NetworksInternet Communications Using SIPPractical VoIP SecurityHandbook of SDP for Multimedia Session NegotiationsThe 3G IP Multimedia Subsystem (IMS)Securing VoIP NetworksHigh-Speed Networks and Multimedia CommunicationsEmerging Wireless MultimediaBuilding a VoIP Network with Nortel's Multimedia Communication Server 5100WebRTC Integrator's GuideSIP: Understanding the Session Initiation Protocol, Fourth EditionInternet Communications Using SIPEncyclopedia of MultimediaSIP SecurityMultimedia CommunicationsHandbook on Session Initiation ProtocolIP TelephonyVoIPSystem Engineering for IMS NetworksWeb Information Systems and TechnologiesMultimedia EngineeringIP TelephonyMultimedia Communications, Services and SecurityFreeSWITCH 1.8Multimedia Networking Technologies, Protocols, and ArchitecturesMultimedia Services and Applications in Mission Critical Communication SystemsSIP DemystifiedRTPInternetworking MultimediaThe IMSPacket Guide to Voice Over IPInternet Multimedia Communications Using SIP

SIP Handbook

The rapid advances and industry demands for networked delivery of information and pictures through computer networks and cable television has created a need for new techniques and standards for the packaging and delivery of digital information. Multimedia Communications presents the latest information from industry and academic experts on all standards, methods and protocols. Internet protocols for wireless communications, transcoding of Internet multimedia for universal access, ATM and ISDN chapters, videoconferencing standards, speech and audio coding standards, multi-casting and image compression techniques are included. Latest Internet protocols for wireless communications Transcoding of Internet multimedia for universal access ATM and ISDN chapters Videoconferencing standards Speech and audio coding standards Multi-casting Latest image compression techniques

Guide to Voice and Video over IP

The first book published on deploying Voice Over IP (VoIP) products from Nortel Networks, the largest supplier of voice products in the world. This book begins with a discussion of the current protocols used for transmitting converged data over IP

as well as an overview of Nortel's hardware and software solutions for converged networks. In this section, readers will learn how H.323 allows dissimilar communication devices to communicate with each other, and how SIP (Session Initiation Protocol) is used to establish, modify, and terminate multimedia sessions including VOIP telephone calls. This section next introduces the reader to the Multimedia Concentration Server 5100, and Nortel's entire suite of Multimedia Communications Portfolio (MCP) products. The remaining chapters of the book teach the reader how to design, install, configure, and troubleshoot the entire Nortel product line. · If you are tasked with designing, installing, configuring, and troubleshooting a converged network built with Nortel's Multimedia Concentration Server 5100, and Multimedia Communications Portfolio (MCP) products, then this is the only book you need. · It shows how you'll be able to design, build, secure, and maintaining a cutting-edge converged network to satisfy all of your business requirements · Also covers how to secure your entire multimedia network from malicious attacks

SIP

This book is for programmers who want to learn about real-time communication and utilize the full potential of WebRTC. It is assumed that you have working knowledge of setting up a basic telecom infrastructure as well as basic programming and scripting knowledge.

Real-Time Communication with WebRTC

This newly revised edition of the groundbreaking bestseller offers a thorough and up-to-date understanding of this revolutionary technology for IP Telephony. Essential reading for anyone involved in the development and operation of voice or data networks, this second edition includes brand-new discussions on the use of SIP as a wireless communications protocol and mobility technology.

IP for 4G

Multimedia technologies and the internet are increasingly intrinsic to our daily lives, and into the future will continue to transform the way we live. Multimedia Engineering describes the latest advances in this technology applied to the Internet and WWW. It immerses the reader into the development of many practical internet/ multimedia systems, offering an insight into a range of engineering problems and solutions. It provides a broad coverage of internet/WWW and multimedia processing, as well as transmission and practical applications. Provides an overview of state-of-the-art technologies Addresses commerical, industrial and educational applications and security and privacy issues. Offers a detailed background into how the internet has been used to support multimedia communications Assumes a practical and descriptive problem-solving approach,

featuring many worked-through examples Written by widely published authors with years of research in the field Multimedia Engineering will appeal to graduate and senior undergraduate students in electrical and electronic engineering, industrial, systems & computer engineering. It will also be of interest to electrical, computer and systems engineers and web developers interested in, or already engaged in, this emerging field.

Handbook on Networked Multipoint Multimedia Conferencing and Multistream Immersive Telepresence using SIP

This volume aims to document the authors' prescription for the architecture, the way the component services are fitted together to provide collaborative tools for video, audio and shared workspaces. The authors have decided to take a new approach to the field by using a prescriptive rather than descriptive style. The text is aimed at technical readers such as developers, undergraduate or postgraduate (MSc) courses on multimedia and networking, and professionals. The subjects covered include the network requirements, the media encoding techniques including basic compression techniques, the protocols (rtp/rtcp, rsvp etc.), the distributed algorithms for synchronization, reliability, security and so on.

IP Telephony

Handbook on Networked Multipoint Multimedia Conferencing and Multistream Immsersive Telepresence using SIP: Scalable Distributed Applications and Media Control over Internet is the first book to put together all IETF request for comments (RFCs), and the internet drafts standards related to the multipoint conferencing and immersive telepresence. This book includes mandatory and optional texts of all standards in a chronological and systematic way almost with one-to-one integrity from the beginning to end, allowing the reader to understand all aspects of the highly complex real-time applications. It is a book that network designers, software developers, product manufacturers, implementers, interoperability testers, professionals, professors, and researchers will find to be immensely useful. Practitioners and engineers in all spectrums who are concentrating on building the real-time, scalable, interoperable multipoint applications, can use this book to make informed choices based on technical standards in the market place, on all proprietary non-scalable and non-interposable products. This book will provide focus and foundation for these decision makers.

Introduction to Multimedia Communications

The provision of IP-based multimedia services is one of the most exiting and challenging aspects of next generation wireless networks. A significant evolution has been underway for enabling such multimedia services and for ultimately migrating the Internet to the wireless world. This book examines this evolution,

looking at an array of the most up-to-date wireless multimedia technologies and services. The first part focuses on enabling technologies for wireless multimedia, while the second is dedicated to the new wireless multimedia services that are expected to play a key role in the future wireless environment. In addition, the related recent standardization, research and industry activities are addressed. * Covers a complete range of multimedia hot topics, ranging from audio/video coding techniques to multimedia protocols and applications * Discusses QoS issues in WLANs, 3G and hybrid 3G/WLAN networks * Provides in-depth discussion of the most modern multimedia services, such as Push-to-Talk, Instant Messaging, Presence, mobile payments, MMS, WAP, and location-based multimedia services * Addresses the emerging Multimedia Broadcast/Multicast Service (MBMS) and the key aspects of IP Multimedia Subsystem (IMS) in 3G networks * Numerous on-line references will assist readers in their quest for the most up-to-date information This comprehensive resource will have instant appeal to students in electrical and computer engineering or IT disciplines. It is also essential reading for engineering managers, engineers in wireless systems and multimedia, and wireless multimedia researchers.

Multimedia Networks

This volume constitutes the refereed proceedings of the 7th International Conference on Multimedia Communications, Services and Security, MCSS 2014,

held in Krakow, Poland, in June 2014. The 21 full papers included in the volume were selected from numerous submissions. The papers cover ongoing research activities in the following topics: audiovisual systems, novel multimedia architectures, multimedia data fusion, acquisition of multimedia content, quality of experience management, watermarking technology and applications, content searching methods, interactive multimedia applications, cybercrime countermeasures, cryptography, biometry, as well as privacy protection solutions.

Internet Communications Using SIP

Understand how new network technologies impact VoIP! Voice over Internet Protocol (VoIP) is revolutionizing the way people communicate – both in the corporate world and in personal life. The enormous success of VoIP has led to its adoption in a wide range of networking technologies. Each network technology has its unique features and poses distinct challenges for the performance of VoIP. VoIP: Wireless, P2P and New Enterprise Voice over IPdescribes the issues arising in the deployment of VoIP in an emerging heterogeneous network environment. Along with a brief overview of the concepts, protocols, algorithms, and equipment involved in realizing VoIP, this book focuses on two areas: quality and performance issues in deploying VoIP over various network settings, and the new mechanisms and protocols in these emerging networks to assist the deployment of VoIP. VoIP: Wireless, P2P and New Enterprise Voice over IP: Discusses the basics of VoIP, VoIP

codecs and VoIP Protocols including SIP and H.323. Details new technologies such as P2P technology, VoWiFi, WiMax, and 3G Networks. Explains the QoS issues arising from deploying VoIP using the new technologies. Solves the performance issues that arise when VoIP is deployed over different network technologies. This book is an invaluable resource for professional network engineers, designers, managers, researchers, decision makers and project managers overseeing VoIP implementations. Market analysts, consultants, and those studying advanced undergraduate and graduate courses on data, voice and multimedia communications will also find this book insightful.

Practical VoIP Security

This book on SDP is the first of this kind that attempts to put all SDP related RFCs together with their mandatory and optional texts in a chronological systematic way as if people can use a single “super-SDP RFC” with almost one-to-one integrity from beginning to end to see the big picture of SDP in addition to base SDP functionalities.

Handbook of SDP for Multimedia Session Negotiations

The IMS is the foundation architecture for the next generation of mobile phones,

wireless-enabled PDAs, PCs, and the like. IMS delivers multimedia content (audio, video, text, etc.) over all types of networks. For network engineers/administrators and telecommunications engineers it will be essential to not only understand IMS architecture, but to also be able to apply it at every stage of the network design process. This book will contain pragmatic information on how to engineer IMS networks as well as an applications-oriented approach for the engineering and networking professionals responsible for making IMS function in the real world. * Describes the convergence of wireless IMS (IP Multimedia Subsystem) with other networks, including wireline and cable * Discusses building interfaces for end users and IMS applications servers * Explores network management issues with IMS

The 3G IP Multimedia Subsystem (IMS)

If you need to know the IMS vision you need to read this book. The IMS (IP Multimedia Subsystem) is the exciting new technology that will merge the Internet with the cellular world. It will make Internet technologies such as the web, email, instant messaging, presence, and videoconferencing available nearly everywhere. The 3G IP Multimedia Subsystem (IMS) provides a thorough overview of the IMS and its technologies. Throughout, the authors first describe how each technology works on the Internet and then explain how the same technology is adapted to work in the IMS, enabling readers to take advantage of any current and future Internet service. Presents an introduction to the IMS - its goals, history, vision, the

organizations involved in its standardization and architecture Discusses the signalling plane of the IMS including protocols, such as SIP and Diameter, used between the IMS architectural entities. Also describes how the IETF developed these protocols and how they are used in the IMS architecture Describes the media plane of the IMS and discusses Internet protocols that are not currently used in the IMS but may be in the future Provides SIP-based service examples such as presence, instant messaging and Push-to-Talk Engineers, programmers, business managers, marketing representatives, and technically aware users will all find this book invaluable as it will help them to understand how the IMS works and the business model behind it.

Securing VoIP Networks

In Securing VoIP Networks, two leading experts systematically review the security risks and vulnerabilities associated with VoIP networks and offer proven, detailed recommendations for securing them. Drawing on case studies from their own fieldwork, the authors address VoIP security from the perspective of real-world network implementers, managers, and security specialists. The authors identify key threats to VoIP networks, including eavesdropping, unauthorized access, denial of service, masquerading, and fraud; and review vulnerabilities in protocol design, network architecture, software, and system configuration that place networks at risk. They discuss the advantages and tradeoffs associated with protection

mechanisms built into SIP, SRTP, and other VoIP protocols; and review key management solutions such as MIKEY and ZRTP. Next, they present a complete security framework for enterprise VoIP networks, and provide detailed architectural guidance for both service providers and enterprise users. 1 Introduction 2 VoIP Architectures and Protocols 3 Threats and Attacks 4 VoIP Vulnerabilites 5 Signaling Protection Mechanisms 6 Media Protection Mechanisms 7 Key Management Mechanisms 8 VoIP and Network Security Controls 9 A Security Framework for Enterprise VoIP Networks 10 Provider Architectures and Security 11 Enterprise Architectures and Security

High-Speed Networks and Multimedia Communications

bull; Demonstrates how real-time audio and video is packetized for transmission. bull; Explains the details of the RTP standards and related concepts. bull; How to implement RTP to work around network problems and limitations

Emerging Wireless Multimedia

"This book is like a good tour guide.It doesn't just describe themajor attractions; you share in the history, spirit, language, andculture of the place." --Henning Schulzrinne, Professor, Columbia University Since its birth in 1996, Session

Initiation Protocol (SIP) hasgrown up. As a richer, much more robust technology, SIP today isfully capable of supporting the communication systems that powerour twenty-first century work and life. This second edition handbook has been revamped to cover the neweststandards, services, and products. You'll find the latest on SIPusage beyond VoIP, including Presence, instant messaging (IM),mobility, and emergency services, as well as peer-to-peer SIPapplications, quality-of-service, and security issues--everythingyou need to build and deploy today's SIP services. This book will help you * Work with SIP in Presence and event-based communications * Handle SIP-based application-level mobility issues * Develop applications to facilitate communications access forusers with disabilities * Set up Internet-based emergency services * Explore how peer-to-peer SIP systems may change VoIP * Understand the critical importance of Internet transparency * Identify relevant standards and specifications * Handle potential quality-of-service and security problems

Building a VoIP Network with Nortel's Multimedia Communication Server 5100

IP (internet protocol) Telephony, enabled by softswitches, is going to usher in a new era in telecommunications. By putting voice and data over one IP network, operators can enjoy lower costs and create new, revenue-generating "multimedia"

services. This valuable reference offers a comprehensive overview of the technology behind IP telephony and offers essential information to network engineers, designers and managers who need to understand the protocols and explore the issues involved in migrating the existing telephony infrastructure to an IP-based real time communication service. Drawing on extensive research and practical development experience in VoIP from its earliest stages, the authors give access to all the relevant standards and cutting-edge techniques in a single resource. IP Telephony: Deploying Voice-over-IP Protocols: Assumes a working knowledge of IP and networking and addresses the technical aspects of real-time communication over IP. Presents a high level overview of packet media transport technologies, covering all the major VoIP protocols – SIP, H323 and MGCP Details specific strategies to design services for public networks where endpoints cannot be trusted and can be behind firewalls. Explores the problems that may arise from incomplete protocol implementations, or architectures optimized for private networks which fail in a public environment. This amply illustrated, state-of-the art reference tool will be an invaluable resource for all those involved in the practical deployment of VoIP technology.

WebRTC Integrator's Guide

The refereed proceedings of the 6th IEEE International Conference on High Speed Networking and Multimedia Communication, HSNMC 2003, held in Estoril, Portugal

in July 2003. The 57 revised full papers presented were carefully reviewed and selected from 105 submissions. The papers are organized in topical sections on integrated differentiated services, multicasting, peer-to-peer networking, quality of service, QoS, network and information management, WDM networks, mobile and wireless networks, video, CDMA, real time issues and protocols for IP networks, multimedia streaming, TCP performance, voice over IP, and traffic models.

SIP: Understanding the Session Initiation Protocol, Fourth Edition

This book presents a review of the latest advances in speech and video compression, computer networking protocols, the assessment and monitoring of VoIP quality, and next generation network architectures for multimedia services. The book also concludes with three case studies, each presenting easy-to-follow step-by-step instructions together with challenging hands-on exercises. Features: provides illustrative worked examples and end-of-chapter problems; examines speech and video compression techniques, together with speech and video compression standards; describes the media transport protocols RTP and RTCP, as well as the VoIP signalling protocols SIP and SDP; discusses the concepts of VoIP quality of service and quality of experience; reviews next-generation networks based on the IP multimedia subsystem and mobile VoIP; presents case studies on

building a VoIP system based on Asterisk, setting up a mobile VoIP system based on Open IMS and Android mobile, and analysing VoIP protocols and quality.

Internet Communications Using SIP

Go under the hood of an operating Voice over IP network, and build your knowledge of the protocols and architectures used by this Internet telephony technology. With this concise guide, you'll learn about services involved in VoIP and get a first-hand view of network data packets from the time the phones boot through calls and subsequent connection teardown. With packet captures available on the companion website, this book is ideal whether you're an instructor, student, or professional looking to boost your skill set. Each chapter includes a set of review questions, as well as practical, hands-on lab exercises. Learn the requirements for deploying packetized voice and video Understand traditional telephony concepts, including local loop, tip and ring, and T carriers Explore the Session Initiation Protocol (SIP), VoIP's primary signaling protocol Learn the operations and fields for VoIP's standardized RTP and RTCP transport protocols Delve into voice and video codecs for converting analog data to digital format for transmission Get familiar with Communications Systems H.323, SIP's widely used predecessor Examine the Skinny Client Control Protocol used in Cisco VoIP phones in networks around the world

Encyclopedia of Multimedia

This book contains a selection of the best papers from WEBIST 2009 (the 5th International Conference on Web Information Systems and Technologies), held in Lisbon, Portugal, in 2009, organized by the Institute for Systems and Technologies of Inf- mation, Control and Communication (INSTICC), in collaboration with ACM SIGMIS and co-sponsored by the Workflow Management Coalition (WFMC). The purpose of the WEBIST series of conferences is to bring together researchers, engineers and practitioners interested in the technological advances and business applications of Web-based information systems. The conference has four main tracks, covering different aspects of Web information systems, including Internet Techn- ogy, Web Interfaces and Applications, Society, e-Communities, e-Business and e-Government. WEBIST 2009 received 203 paper submissions from 47 countries on all con- nents. A double-blind review process was enforced, with the help of more than 150 experts from the International Program Committee; each of them specialized in one of the main conference topic areas. After reviewing, 28 papers were selected to be published and presented as full papers and 44 additional papers, describing work-- progress, published and presented as short papers. Furthermore, 35 papers were p- sented as posters. The full-paper acceptance ratio was 13%, and the total oral paper acceptance ratio was 36%. Therefore, we hope that you find the papers included in this book interesting, and we trust they may represent a helpful reference for all those who need to address

any of the research areas mentioned above. January 2010 José Cordeiro Joaquim Filipe

SIP Security

This practical resource provides a survey on the technologies, protocols, and architectures that are widely used in practice to implement networked multimedia services. The book presents the background and basic concepts behind multimedia networking, and provides a detailed analysis of how multimedia services work, reviewing the diverse network protocols that are of common use to implement them. To guide the explanation of concepts, the book focuses on a representative set of networked multimedia services with proven success and high penetration in the telecommunication market, namely Internet telephony, Video-on-Demand (VoD), and live IP television (IPTV). Contents are presented following a stepwise approach, describing each network protocol in the context of a networked multimedia service and making appropriate references to the protocol as needed in the description of other multimedia services. This book also contains questions and exercises to provide the reader with insight on the practical application of the explained concepts. Additionally, a laboratory practice is included, based on open-source tools and software, to analyze the operation of an Internet telephony service from a practical perspective, as well as to deploy some of its fundamental components.

Multimedia Communications

All you need to know about deploying VoIP protocols in one comprehensive and highly practical reference - Now updated with coverage on SIP and the IMS infrastructure This book provides a comprehensive and practical overview of the technology behind Internet Telephony (IP), providing essential information to Network Engineers, Designers, and Managers who need to understand the protocols. Furthermore, the author explores the issues involved in the migration of existing telephony infrastructure to an IP - based real time communication service. Assuming a working knowledge of IP and networking, it addresses the technical aspects of real-time applications over IP. Drawing on his extensive research and practical development experience in VoIP from its earliest stages, the author provides an accessible reference to all the relevant standards and cutting-edge techniques in a single resource. Key Features: Updated with a chapter on SIP and the IMS infrastructure Covers ALL the major VoIP protocols – SIP, H323 and MGCP Includes a large section on practical deployment issues gleaned from the authors' own experience Chapter on the rationale for IP telephony and description of the technical and business drivers for transitioning to all IP networks This book will be a valuable guide for professional network engineers, designers and managers, decision makers and project managers overseeing VoIP implementations, market analysts, and consultants. Advanced undergraduate and graduate students undertaking data/voice/multimedia communications courses will also find this book

of interest. Olivier Hersent founded NetCentrex, a leading provider of VoIP infrastructure for service providers, then became CTO of Comverse after the acquisition of NetCentrex. He now manages Actility, provider of IMS based M2M and smartgrid infrastructure and applications.

Handbook on Session Initiation Protocol

Voice Over IP (VoIP) phone lines now represent over 50% of all new phone line installations. Every one of these new VoIP phone lines and handsets must now be protected from malicious hackers because these devices now reside on the network and are accessible from the Internet just like any server or workstation. This book will cover a wide variety of the publicly available exploit tools and how they can be used specifically against VoIP (Voice over IP) Telephony systems. The book will cover the attack methodologies that are used against the SIP and H.323 protocols as well as VoIP network infrastructure. Significant emphasis will be placed on both attack and defense techniques. This book is designed to be very hands on and scenario intensive · More VoIP phone lines are being installed every day than traditional PBX phone lines · VoIP is vulnerable to the same range of attacks of any network device · VoIP phones can receive as many Spam voice mails as your e-mail can receive Spam e-mails, and as result must have the same types of anti-spam capabilities

IP Telephony

This second edition provides easy access to important concepts, issues and technology trends in the field of multimedia technologies, systems, techniques, and applications. Over 1,100 heavily-illustrated pages — including 80 new entries — present concise overviews of all aspects of software, systems, web tools and hardware that enable video, audio and developing media to be shared and delivered electronically.

VoIP

Session Initiation Protocol (SIP), standardized by the Internet Engineering Task Force (IETF), has emulated the simplicity of the protocol architecture of hypertext transfer protocol (HTTP) and is being popularized for VoIP over the Internet because of the ease with which it can be meshed with web services. However, it is difficult to know exactly how many requests for comments (RFCs) have been published over the last two decades in regards to SIP or how those RFCs are interrelated. Handbook on Session Initiation Protocol: Networked Multimedia Communications for IP Telephony solves that problem. It is the first book to put together all SIP-related RFCs, with their mandatory and optional texts, in a chronological and systematic way so that it can be used as a single super-SIP RFC

with an almost one-to-one integrity from beginning to end, allowing you to see the big picture of SIP for the basic SIP functionalities. It is a book that network designers, software developers, product manufacturers, implementers, interoperability testers, professionals, professors, and researchers will find to be very useful. The text of each RFC from the IETF has been reviewed by all members of a given working group made up of world-renowned experts, and a rough consensus made on which parts of the drafts need to be mandatory and optional, including whether an RFC needs to be Standards Track, Informational, or Experimental. Texts, ABNF syntaxes, figures, tables, and references are included in their original form. All RFCs, along with their authors, are provided as references. The book is organized into twenty chapters based on the major functionalities, features, and capabilities of SIP.

System Engineering for IMS Networks

The 3rd edition of this highly successful text builds onthe achievement of the first two editions to provide comprehensivecoverage of IMS. It continues to explore the concepts,architecture, protocols and functionalities of IMS while providinga wealth of new and updated information. It is written in a mannerthat allows readers to choose the level of knowledge andunderstanding they need to gain about the IMS. With 35% new material, The IMS,IP Multimedia Concepts andServices, 3rd Edition has been completely revised toinclude updated chapters as well as totally new

chapters on IMSmultimedia telephony and IMS voice call continuity. Additional newmaterial includes IMS transit, IMS local numbering, emergencysessions, identification of communication services in IMS, newauthentication model for fixed access, NAT traversal and globallyroutable user agents URI. Detailed descriptions of protocolbehaviour are provided on a level that can be used forimplementation and testing. Key features of the 3rd edition: Two new chapters on IMS multimedia telephony service and IMSVoice Call Continuity Updated information on Third Generation Partnership Project(3GPP) Release 7 level, including architecture, reference pointsand concepts Substantially extended coverage on IMS detailed procedures Completely rewritten and extended chapters on IMSservices

Web Information Systems and Technologies

State-of-the-art SIP primer SIP (Session Initiation Protocol) is the open standard that will make IP telephony an irresistible force in communications, doing for converged services what http does for the Web. SIP Demystified – authored by Gonzalo Camarillo, one of the contributors to SIP development in the IETF—gives you the tools to keep your company and career competitive. This guide tells you why the standard is needed, what architectures it supports, and how it interacts with other protocols. As a bonus, you even get a context-setting background in data networking. Perfect if you're moving from switched voice into a data networking environment, here's everything you need to understand: * Where, why,

and how SIP is used * What SIP can do and deliver * SIP's fit with other standards and systems * How to plan implementations of SIP-enabled services * How to size up and choose from available SIP products

Multimedia Engineering

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 base 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 which special time adaption 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.

IP Telephony

Excellent reference with expert insight into the future evolution of mobile communications: 4G IP for 4G examines the concept of 4G, providing an in-depth background to the key technologies and developments shaping the new generation of mobile services, including Wireless Local Area Networks (WLANs), Worldwide Interoperability for Microwave Access (WiMAX), IP developments (SIP and Media Independent Handover), Internet Multimedia Subsystem (IMS), and 3G (HSDPA and LTE). The book addresses these key technological drivers in light of commercial propositions such as generating extra revenue and reducing costs, and offers an up-to-date briefing on the future of mobile communications in the coming years. Key features: Presents and analyses the key technological drivers of 4G, including WLANs, WiMAX, convergence and IMS Examines the rationale for IP for 4G by bringing together technologies, global developments and economic arguments in one single volume Describes and puts in context the developments in the IEEE 802.21 Media Independent Handover group, in particular the options for network/terminal controlled handover and the likely mechanisms for seamless handover – including application adaptation Written for readability as well as depth – with access to detailed descriptions of technologies but also quick overviews Contains scenario descriptions to motivate the need for seamless handover and benefits for the user (single sign-on access to networks, single billing) Contains hundreds of original diagrams – carefully drawn to illustrate the complex

technology and quickly provide a summary of the main issues. Accompanying website supports the book with additional diagrams, figures and references for further reading IP for 4G is an invaluable reference for professionals in mobile/fixed telecoms and ICT industries, practicing telecommunications and network engineers, system designers and developers. Graduate level students studying MSc and higher-level courses on networking will also find this book of interest.

Multimedia Communications, Services and Security

This book gives a detailed overview of SIP specific security issues and how to solve them While the standards and products for VoIP and SIP services have reached market maturity, security and regulatory aspects of such services are still being discussed. SIP itself specifies only a basic set of security mechanisms that cover a subset of possible security issues. In this book, the authors survey important aspects of securing SIP-based services. This encompasses a description of the problems themselves and the standards-based solutions for such problems. Where a standards-based solution has not been defined, the alternatives are discussed and the benefits and constraints of the different solutions are highlighted. Key Features: Will help the readers to understand the actual problems of using and developing VoIP services, and to distinguish between real problems and the general hype of VoIP security Discusses key aspects of SIP security including authentication, integrity, confidentiality, non-repudiation and signalling Assesses

the real security issues facing users of SIP, and details the latest theoretical and practical solutions to SIP Security issues Covers secure SIP access, inter-provider secure communication, media security, security of the IMS infrastructures as well as VoIP services vulnerabilities and countermeasures against Denial-of-Service attacks and VoIP spam This book will be of interest to IT staff involved in deploying and developing VoIP, service users of SIP, network engineers, designers and managers. Advanced undergraduate and graduate students studying data/voice/multimedia communications as well as researchers in academia and industry will also find this book valuable.

FreeSWITCH 1.8

From leading WorldCom engineers--expert guidance on how to plan for SIP implementation Session Initiation Protocol (SIP) has gained tremendous market acceptance since it became an official IETF Internet communications standard in 1999. SIP is the technology that makes it possible for multimedia communications sessions on the Web--ones that allow voice, video, chat, interactive games, and others to run all at the same time. Now that the deployment of real SIP networks is about to take off, two leaders of the commercial rollout deliver complete guidance on this exciting new technology. Geared to IT and networking professionals and decision-makers at Internet service providers (ISPs), as well as networking (NSPs) and application (ASPs) service providers, this book helps readers sort through the

available vendor offerings and services to discover how to integrate and maximize SIP's power across their networks.

Multimedia Networking Technologies, Protocols, and Architectures

Now in its fourth edition, the ground-breaking Artech House bestseller SIP: Understanding the Session Initiation Protocol offers you the most comprehensive and current understanding of this revolutionary protocol for call signaling and IP Telephony. The fourth edition incorporates changes in SIP from the last five years with new chapters on internet threats and attacks, WebRTC and SIP, and substantial updates throughout. This cutting-edge book shows how SIP provides a highly-scalable and cost-effective way to offer new and exciting telecommunication feature sets, helping practitioners design “next generation” network and develop new applications and software stacks. Other key discussions include SIP as a key component in the Internet multimedia conferencing architecture, request and response messages, devices in a typical network, types of servers, SIP headers, comparisons with existing signaling protocols including H.323, related protocols SDP (Session Description Protocol) and RTP (Real-time Transport Protocol), and the future direction of SIP.

Multimedia Services and Applications in Mission Critical Communication Systems

Build a robust, high-performance telephony system with FreeSWITCH About This Book Learn how to install and configure a complete telephony system of your own, from scratch, using FreeSWITCH 1.6 Get in-depth discussions of important concepts such as dialplan, user directory, NAT handling, and the powerful FreeSWITCH event socket Discover expert tips from the FreeSWITCH experts, including the creator of FreeSWITCH—Anthony Minessale Who This Book Is For This book is for beginner-level IT professionals and enthusiasts who are interested in quickly getting a powerful telephony system up and running using FreeSWITCH. It would be good if you have some telephony experience, but it's not a must. What You Will Learn Build a complete WebRTC/SIP VoIP platform able to interconnect and process audio and video in real time Use advanced PBX features to create powerful dialplans Understand the inner workings and architecture of FreeSWITCH Real time configuration from database and webserver with mod_xml_curl Integrate browser clients into your telephony service Use scripting to go beyond the dialplan with the power and flexibility of a programming language Secure your FreeSWITCH connections with the help of effective techniques Deploy all FreeSWITCH features using best practices and expert tips Overcome frustrating NAT issues Control FreeSWITCH remotely with the all-powerful event socket Trace packets, check

debug logging, ask for community and commercial help In Detail FreeSWITCH is an open source telephony platform designed to facilitate the creation of voice and chat-driven products, scaling from a soft-phone to a PBX and even up to an enterprise-class soft-switch. This book introduces FreeSWITCH to IT professionals who want to build their own telephony system. This book starts with a brief introduction to the latest version of FreeSWITCH. We then move on to the fundamentals and the new features added in version 1.6, showing you how to set up a basic system so you can make and receive phone calls, make calls between extensions, and utilize basic PBX functionality. Once you have a basic system in place, we'll show you how to add more and more functionalities to it. You'll learn to deploy the features on the system using unique techniques and tips to make it work better. Also, there are changes in the security-related components, which will affect the content in the book, so we will make that intact with the latest version. There are new support libraries introduced, such as SQLite, OpenSS, and more, which will make FreeSWITCH more efficient and add more functions to it. We'll cover these in the new edition to make it more appealing for you. Style and approach This easy-to-follow guide helps you understand every topic easily using real-world examples of FreeSWITCH tasks. This book is full of practical code so you get a gradual learning curve.

SIP Demystified

A comprehensive resource on multimedia communications. Covers recent trends and standardization activities in multimedia communications, such as layered structures, underlying theories and the current best design techniques. Describes the convergence of various technologies including communications, broadcasting, information technology, and home electronics, and emerging new communication services and applications resulting from the growth of the Internet and wireless technologies. Please go to www-ee.uta.edu/dip for additional information.

RTP

In emergency and disaster scenarios, it is vital to have a stable and effective infrastructure for relaying communication to the public. With the advent of new technologies, more options are available for enhancing communication systems. Multimedia Services and Applications in Mission Critical Communication Systems is a comprehensive source of academic research on the challenges and solutions in creating stable mission critical systems and examines methods to improve system architecture and resources. Highlighting innovative perspectives on topics such as quality of service, performance metrics, and intrusion detection, this book is ideally designed for practitioners, professionals, researchers, graduate students, and academics interested in public safety communication systems.

Internetworking Multimedia

The authors bring together all the diverse information network professionals and developers need to build IP-based multimedia and voice networks, including coverage on key technologies, protocols, standards, security, access, and more.

The IMS

Widely adopted by service providers to enable IP telephony, instant messaging, and other data services, SIP is the signaling protocol of choice for advanced multimedia communications signaling. Compiled by noted engineering experts Syed Ahson and Mohammad Ilyas, SIP Handbook: Services, Technologies, and Security of Session Initiation Protocol presents a thorough technical review of all aspects of SIP. It captures the current state of IP Multimedia Subsystem technology and provides a unique source of comprehensive reference material on this subject. SIP Applications for Today and Tomorrow The scope of this volume ranges from basic concepts to future perspectives. Divided into three sections, the book begins with a discussion of SIP in peer-to-peer networks and then goes on to examine advanced media integration, migration considerations, mobility management, and group conferencing, while also reviewing home networking and compliance issues. The middle section of the book focuses on the underlying technologies of SIP.

Chapters review network architecture, vertical handoffs, NAT traversals, multipoint extensions, and other areas at the forefront of research. Finally, the text examines various security vulnerabilities and provides perspectives on secure intelligent SIP services with a future outlook on a fraud detection framework in VoIP networks. Insights from International Researchers Authored by 65 experts from across the world, this text is sure to advance the field of knowledge in this ever-changing industry and provide further impetus for new areas of exploration. Because of the editors' pivotal influence and their proximity to both the current market and the latest science, this work is certain to become the definitive text on this emerging technology.

Packet Guide to Voice Over IP

Deliver rich audio and video real-time communication and peer-to-peer data exchange right in the browser, without the need for proprietary plug-ins. This concise hands-on guide shows you how to use the emerging Web Real-Time Communication (WebRTC) technology to build a browser-to-browser application, piece by piece. The authors' learn-by-example approach is perfect for web programmers looking to understand real-time communication, and telecommunications architects unfamiliar with HTML5 and JavaScript-based client-server web programming. You'll use a ten-step recipe to create a complete WebRTC system, with exercises that you can apply to your own projects. Tour the

WebRTC development cycle and trapezoid architectural model Understand how and why VoIP is shifting from standalone functionality to a browser component Use mechanisms that let client-side web apps interact with browsers through the WebRTC API Transfer streaming data between browser peers with the RTCPeerConnection API Create a signaling channel between peers for setting up a WebRTC session Put everything together to create a basic WebRTC system from scratch Learn about conferencing, authorization, and other advanced WebRTC features

Internet Multimedia Communications Using SIP

Session Initiation Protocol (SIP) was conceived in 1996 as a signaling protocol for inviting users to multimedia conferences. With this development, the next big Internet revolution silently started. That was the revolution which would end up converting the Internet into a total communication system which would allow people to talk to each other, see each other, work collaboratively or send messages in real time. Internet telephony and, in general, Internet multimedia, is the new revolution today and SIP is the key protocol which allows this revolution to grow. The book explains, in tutorial fashion, the underlying technologies that enable real-time IP multimedia communication services in the Internet (voice, video, presence, instant messaging, online picture sharing, white-boarding, etc). Focus is on session initiation protocol (SIP) but also covers session description

protocol (SDP), Real-time transport protocol (RTP), and message session relay protocol (MSRP). In addition, it will also touch on other application-related protocols and refer to the latest research work in IETF and 3GPP about these topics. (3GPP stands for "third-generation partnership project" which is a collaboration agreement between ETSI (Europe), ARIB/TTC (Japan), CCSA (China), ATIS (North America) and TTA (South Korea).) The book includes discussion of leading edge theory (which is key to really understanding the technology) accompanied by Java examples that illustrate the theoretical concepts. Throughout the book, in addition to the code snippets, the reader is guided to build a simple but functional IP soft-phone therefore demonstrating the theory with practical examples. This book covers IP multimedia from both a theoretical and practical point of view focusing on letting the reader understand the concepts and put them into practice using Java. It includes lots of drawings, protocol diagrams, UML sequence diagrams and code snippets that allow the reader to rapidly understand the concepts. Focus on HOW multimedia communications over the Internet works to allow readers to really understand and implement the technology Explains how SIP works, including many programming examples so the reader can understand abstract concepts like SIP dialogs, SIP transactions, etc. It is not focused on just VoIP. It looks At a wide array of enhanced communication services related to SIP enabling the reader put this technology into practice. Includes nearly 100 references to the latest standards and working group activities in the IETF, bringing the reader completely up to date. Provides a step-by-step tutorial on how to build a basic, though functional, IP soft-

phone allowing the reader to put concepts into practice. For advanced readers, the book also explains how to build a SIP proxy and a SIP registrar to enhance one's expertise and marketability in this fast moving area.