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KEY=PROCEEDINGS - JAMARI PARSONS

Quality of Future Internet Services First COST 263 International Workshop, QofIS 2000 Berlin, Germany, September 25-26, 2000 Proceedings Springer The papers in this book present various viewpoints on the design and - plementation of techniques for QoS engineering for Internet services. They were selected from more than 70 submissions to the 1st International workshop on "Quality of future Internet services" (QofIS) organized by COST Action 263. The main focus of the papers is on the creation, con?guration and deployment of end-to-end services over a QoS assured Internet using the IntServ (Integrated Services) and Di?Serv (Di?erentiated Services) models. The main technical p- gramme was completed by two keynote talks: IETF Chair Fred Baker opened the workshop with a discussion on major Internet development directions and Andrew M. Odlyzko of AT&T Labs Research gave the closing talk on Internet charging issues. The presentation of papers was organised in 9 sessions. The emphasis of Session 1 is on an assessment of the essential building blocks for a QoS assured Internet, i.e., queueing and scheduling, which basically de?nes the space for end-to-end services. The papers of this session discuss the bounds we may expect from these building blocks, the issues of queueing and scheduling management, and the parameters we need to tune in a dynamic implementation. Flow control and congestion control cannot be considered without regard to the dominating impact of TCP. The keyword of Session 2 is, therefore, Intern- friendly adaptation. Four papers in this session are complementary and together present an emerging understanding of a basic optimal area for such adaptation. **Quality of Future Internet Services First COST 263 International Workshop, QofIS 2000 Berlin, Germany, September 25-26, 2000 Proceedings** Springer The papers in this book present various viewpoints on the design and - plementation of techniques for QoS engineering for Internet services. They were selected from more than 70 submissions to the 1st International workshop on "Quality of future Internet services" (QofIS) organized by COST Action 263. The main focus of the papers is on the creation, con?guration and deployment of end-to-end services over a QoS assured Internet using the IntServ (Integrated Services) and Di?Serv (Di?erentiated Services) models. The main technical p- gramme was completed by two keynote talks: IETF Chair Fred Baker opened the workshop with a discussion on major Internet development directions and Andrew M. Odlyzko of AT&T Labs Research gave the closing talk on Internet charging issues. The presentation of papers was organised in 9 sessions. The emphasis of Session 1 is on an assessment of the essential building blocks for a QoS assured Internet, i.e., queueing and scheduling, which basically de?nes the space for end-to-end services. The papers of this session discuss the bounds we may expect from these building blocks, the issues of queueing and scheduling management, and the parameters we need to tune in a dynamic implementation. Flow control and congestion control cannot be considered without regard to the dominating impact of TCP. The keyword of Session 2 is, therefore, Intern- friendly adaptation. Four papers in this session are complementary and together present an emerging understanding of a basic optimal area for such adaptation. **Quality of Future Internet Services First COST 263 International Workshop, QofIS 2000 Berlin, Germany, September 25-26, 2000 Proceedings** Springer The papers in this book present various viewpoints on the design and - plementation of techniques for QoS engineering for Internet services. They were selected from more than 70 submissions to the 1st International workshop on "Quality of future Internet services" (QofIS) organized by COST Action 263. The main focus of the papers is on the creation, con?guration and deployment of end-to-end services over a QoS assured Internet using the IntServ (Integrated Services) and Di?Serv (Di?erentiated Services) models. The main technical p- gramme was completed by two keynote talks: IETF Chair Fred Baker opened the workshop with a discussion on major Internet development directions and Andrew M. Odlyzko of AT&T Labs Research gave the closing talk on Internet charging issues. The presentation of papers was organised in 9 sessions. The emphasis of Session 1 is on an assessment of the essential building blocks for a QoS assured Internet, i.e., queueing and scheduling, which basically de?nes the space for end-to-end services. The papers of this session discuss the bounds we may expect from these building blocks, the issues of

queueing and scheduling management, and the parameters we need to tune in a dynamic implementation. Flow control and congestion control cannot be considered without regard to the dominating impact of TCP. The keyword of Session 2 is, therefore, Intern- friendly adaptation. Four papers in this session are complementary and together present an emerging understanding of a basic optimal area for such adaptation. **Engineering Internet QoS Artech House** From the basics to the most advanced quality of service (QoS) concepts, this all encompassing, first-of-its-kind book offers an in-depth understanding of the latest technical issues raised by the emergence of new types, classes and qualities of Internet services. . This books provides sufficient depth for major QoS concepts and architectures. The book provides end-to-end QoS guidance for real time multimedia communications over the Internet. It offers you a multiplicity of hands-on examples and simulation script support, and shows you where and when it is preferable to use these techniques for QoS support in networks and Internet traffic with widely varying characteristics and demand profiles. **Architectures for Quality of Service in the Internet International Workshop, Art-QoS 2003, Warsaw, Poland, March 24-25, 2003, Revised Papers Springer** The thoroughly refereed postproceedings of the International Workshop on Architectures for Quality of Service in the Internet, Art-QoS 2003, held in Warsaw, Poland, in March 2003. The 22 revised full papers presented were carefully reviewed and selected for inclusion in the book. The papers are organized in topical sections on architectures for next generation networks, architectures and services, signalling, admission control, AQUILA-resource control, AQUILA-QoS at work, MPLS traffic engineering, and traffic control mechanisms. **From QoS Provisioning to QoS Charging Third COST 263 International Workshop on Quality of Future Internet Services, QofIS 2002, and Second International Workshop on Internet Charging and QoS Technologies, ICQT 2002, Zurich, Switzerland, October 16-18, 2002, Proceedings Springer** This volume of the Lecture Notes in Computer Science series contains the set of papers accepted for publication at the colocated QofIS/ICQT 2002 workshops, i.e. the 3rd COST Action 263 International Workshop on Quality of future Internet Services (QofIS) and the 2nd International Workshop on Internet Charging and QoS Technology (ICQT), both of which took place at the ETH Zric h, Switzerland, hosted by the Computer Engineering and Networking Laboratory, TIK. QofIS 2002 was the third in a series of highly successful technical workshops and meetings on Internet services within the framework of the COST Action 263 Q uality of future Internet Services , following previous events in Berlin, Germany in 2000 and in Coimbra, Portugal in 2001. ICQT 2002 was the follow-up to a vivid and extremely well-attended workshop on Internet economics and charging technology that took place within the framework of the Annual Meeting of the German Society for Computer Science (GI) and the Austrian Computer Society in 2001 in Vienna, Austria. **The Competitive Internet Service Provider Network Architecture, Interconnection, Traffic Engineering and Network Design John Wiley & Sons** Due to the dramatic increase in competition over the last few years, it has become more and more important for Internet Service Providers (ISPs) to run an efficient business and offer an adequate Quality of Service. The Competitive Internet Service Provider is a comprehensive guide for those seeking to do just that. Oliver Heckmann approaches the issue from a system point of view, looking not only at running a network, but also at connecting the network with peering and transit partners or planning the expansion of the network. The Competitive Internet Service Provider: Offers an advanced reference on the topic, drawing on state-of-the art research in network technology. Clearly defines the criteria enabling ISPs to operate with the greatest efficiency and deliver adequate Quality of Service. Discusses the implications of the future multiservice Internet and multimedia applications such as Voice over IP, peer-to-peer, or network games. Delivers a comparative evaluation of different feasible Quality of Service approaches. Explores scientific methods such as queuing theory, network calculus, and optimization theory. Illustrates concepts throughout with mathematical models and simulations. This invaluable reference will provide academic and industrial researchers in the field of network and communications technology, graduate students on telecommunications courses, as well as ISP managers, engineers and technicians, equipment manufacturers and consultants, with an understanding of the concepts and issues involved in running a successful ISP. **Performability Has its Price 5th International Workshop on Internet Charging and QoS Technologies, ICQT 2006, St. Malo, France, June 27, 2006, Proceedings Springer** This book constitutes the refereed proceedings of the 5th International Workshop on Internet Charging and QoS Technologies, ICQT 2006, held in St. Malo, France, June 2006 as an associated workshop of ACM Sigmetrics / IFIP Performance 2006. The book presents eight revised full papers together with a keynote paper, organized in topical sections on economy-driven modeling, auctions, peer-to-peer, and secure billing, addressing vital topics in networking research and business modeling. **IEEE Workshop on High Performance Switching and Routing From QoS Provisioning to QoS Charging ... COST 263 International Workshop on Quality of Future Internet Services, QofIS ... and ... International Workshop on Internet Charging and QoS Technologies, ICQT ... : Proceedings Quality of Future Internet Services American Book Publishing Record The British National Bibliography Deutsche Nationalbibliographie und Bibliographie der im Ausland erschienenen deutschsprachigen Veröffentlichungen Monographien und Periodika--Halbjahresverzeichnis. Reihe D Quality for All ... COST 263 International Workshop on Quality of Future Internet Services, QofIS ... : Proceedings Index of Conference Proceedings Annual cumulation Quality of Future Internet Services COST Action 263 Final Report Springer Science & Business Media** This book presents a state-of-the-art survey of technologies, algorithms, models, and experiments in the area quality of Internet service. It is based on the European Action COST 263 Quality of Future Internet Services, which involved 70 researchers during a period of almost five years. The results presented in the book reflect the state of the art in the area beyond the Action COST 263. The six comprehensive chapters are written by teams of leading researchers in the area; a roadmap outlines and summarizes the overall situation and indicates future developments. The book offers chapters on traffic managements, quality of service routing, Internet traffic engineering, mobile networking, algorithms for scalable content distribution, and pricing and QoS. **Challenges in Ad Hoc Networking Fourth Annual Mediterranean Ad Hoc Networking Workshop, June 21-24, 2005, Île de Porquerolles, France Springer Science & Business Media** This book contains the refereed proceedings of the Fourth Annual Mediterranean Ad Hoc Networking Workshop, Med-Hoc-Net 2005. Med-Hoc-Net 2005 consolidated the success of the previous editions of the workshop series. It aimed to serve as a platform for researchers from academia, research, laboratories, and industry from all over the world to share their ideas, views, reults, and experiences in the field of ad-hoc networking. **IPv6 The New Internet Protocol Prentice Hall** The fast-selling first edition was based on the draft IPv6 standard and now the standard has been finalized. The protocol addresses a major problem that is facing the Internet--shrinking bandwidth. The Ipv6

standard provides for additional bandwidth by incorporating changes in the addressing structure (the Internet was running out of address space/domains) and allocating resources differently (to prevent disasters like exploding routing tables).

Biologically Inspired Networking and Sensing: Algorithms and Architectures *IGI Global* Biologically Inspired Networking and Sensing: Algorithms and Architectures offers current perspectives and trends in biologically inspired networking, exploring various approaches aimed at improving network paradigms. Research contained within this compendium of research papers and surveys introduces researches in the fields of communication networks, performance modeling, and distributed computing to new advances in networking.

Network Congestion Control Managing Internet Traffic *John Wiley & Sons* As the Internet becomes increasingly heterogeneous, the issue of congestion control becomes ever more important. In order to maintain good network performance, mechanisms must be provided to prevent the network from being congested for any significant period of time. Michael Welzl describes the background and concepts of Internet congestion control, in an accessible and easily comprehensible format. Throughout the book, not just the how, but the why of complex technologies including the Transmission Control Protocol (TCP) and Active Queue Management are explained. The text also gives an overview of the state-of-the-art in congestion control research and an insight into the future.

Network Congestion Control: Presents comprehensive, easy-to-read documentation on the advanced topic of congestion control without heavy maths. Aims to give a thorough understanding of the evolution of Internet congestion control: how TCP works, why it works the way it does, and why some congestion control concepts failed for the Internet. Explains the Chiu/Jain vector diagrams and introduces a new method of using these diagrams for analysis, teaching & design. Elaborates on how the theory of congestion control impacts on the practicalities of service delivery. Includes an appendix with examples/problems to assist learning. Provides an accompanying website with Java tools for teaching congestion control, as well as examples, links to code and projects/bibliography. This invaluable text will provide academics and researchers in computer science, electrical engineering and communications networking, as well as students on advanced networking and Internet courses, with a thorough understanding of the current state and future evolution of Internet congestion control. Network administrators and Internet service and applications providers will also find Network Congestion Control a comprehensive, accessible self-teach tool.

Mobility Aware Technologies and Applications First International Workshop, MATA 2004, Florianopolis, Brazil, October 20-22, 2004. Proceedings *Springer* It is becoming quite clear that there will be important technological advances in - bile and wireless connectivity, known as third-/fourth-generation (3G and 4G) mobile telecommunications systems. As a result we will be surrounded by ever-growing m- tidomain (technical and administrative) heterogeneous communications in both wired and wireless networks. This resulting environment deals with communication in m- tized networks, where people, devices, appliances and servers are connected to each other via different kinds of networks. Networks will be pervasive, ubiquitous, multis- vice, multioperatorand multiaccess. The mobility trend will also be spurred forward by the growing availability of mobile-enabled handheld devices. Mobile systems are expected to provide mobile users with cost-effective, secure, yet ubiquitous service access anywhere and anytime. Users will then continue to enjoy the new-found freedom mobile access provides and will have increasingly high exp- tations of mobility-aware applications that should be capable of seamlessly supporting the mobile lifestyle. The papers in this volume discuss issues from models, platforms, and architectures for mobility-aware systems to security, mobile agent technologies, sensitive com- nications, context awareness, mobile applications and management. They cover both practical experience and novel research ideas and concepts.

Stochastic Network Calculus *Springer Science & Business Media* Network calculus is a theory dealing with queuing systems found in computer networks. Its focus is on performance guarantees. Central to the theory is the use of alternate algebras such as the min-plus algebra to transform complex network systems into analytically tractable systems. To simplify the ana- sis, another idea is to characterize tra?c and service processes using various bounds. Since its introduction in the early 1990s, network calculus has dev- oped along two tracks—deterministic and stochastic. This book is devoted to summarizing results for stochastic network calculus that can be employed in the design of computer networks to provide stochastic service guarantees. Overview and Goal Like conventional queuing theory, stochastic network calculus is based on properly de?ned tra?c models and service models. However, while in c- ventional queuing theory an arrival process is typically characterized by the inter-arrival times of customers and a service process by the service times of customers, the arrival process and the service process are modeled in n- work calculus respectively by some arrival curve that (maybe probablis- cally) upper-bounds the cumulative arrival and by some service curve that (maybe probabilistically) lower-bounds the cumulative service. The idea of usingboundstocharacterizetra?candservicewasinitiallyintroducedfor- terministic network calculus. It has also been extended to stochastic network calculus by exploiting the stochastic nature of arrival and service processes.

Next-Generation Networks Proceedings of CSI-2015 *Springer* This book comprises select proceedings of the 2015 annual conference of the Computer Society of India. The books focuses on next generation networks (NGN). An NGN is a packet-based network which can provide services including telecommunication services. NGNs make use of multiple broadband, quality-of-service-enabled transport technologies in which service-related functions are independent from underlying transport-related technologies. This volume includes contributions from experts on various aspects of NGNs. The papers included cover theory, methodology and applications of ad-hoc networks, sensor networks, and the internet. The contents also delve into how the new enterprise IT landscape of cloud services, mobility, social media usage and big data analytics creates different types of network traffic to the traditional mix of in-house client-server enterprise workloads. The contents of this book will be useful to researchers and professionals alike.

The Practical Real-Time Enterprise Facts and Perspectives *Springer Science & Business Media* The basic idea of the real-time enterprise is to become quicker. A business which wants to become a real-time enterprise has to acquire three main abilities: - Internal and external data is integrated quickly and in real time in a well-organized company data pool, - Analyses of information in the company data pool can be obtained in real time, across function boundaries and at the touch of a button, - The number of working steps performed in batch mode is shifting dramatically in favor of immediate completion in real time. The issue of communications - or real-time communications - plays a special role here. Studies have shown that processing times sometimes double when necessary communication events are handled in batch mode in the business process and not in real time. In other words, when an activity cannot be completed and lies around for days because an urgently needed partner cannot be contacted. The necessity of acquiring these three abilities has implications for the process-related, technical and

organizational aspects of a business that are dealt with in detail in this book. **Essays in Mathematical Economics, in Honor of Oskar Morgenstern** Princeton University Press Professor Morgenstern's deep interests in economic time series and problems of measurement are represented by path-breaking articles devoted to the application of modern statistical analysis to temporal economic data. Originally published in 1967. The Princeton Legacy Library uses the latest print-on-demand technology to again make available previously out-of-print books from the distinguished backlist of Princeton University Press. These editions preserve the original texts of these important books while presenting them in durable paperback and hardcover editions. The goal of the Princeton Legacy Library is to vastly increase access to the rich scholarly heritage found in the thousands of books published by Princeton University Press since its founding in 1905. **Quality of Service in Multiservice IP Networks Third International Workshop, QoS-IP 2005, Catania, Italy, February 2-4, 2005** Springer Science & Business Media This book constitutes the refereed proceedings of the Third International Workshop on Quality of Service in Multiservice IP Networks, QoS-IP 2005, held in Catania, Italy in February 2005. The 50 revised full papers presented were carefully reviewed and selected from around 100 submissions. The papers are organized in topical sections on analytical models, traffic characterization, MPLS failure and restoration, network planning and dimensioning, DiffServ and InfServ, routing, software routers, network architectures for QoS provisioning, multiservice in wireless networks, TCP in special environments, and scheduling. **Architectures for Quality of Service in the Internet Towards Digital Optical Networks COST Action 291 Final Report** Springer Science & Business Media COST – the acronym for European COoperation in Science and Technology – is the oldest and widest European intergovernmental network for cooperation in - search. Established by the Ministerial Conference in November 1971, COST is presently used by the scientific communities of 35 European countries to coop- ate in common research projects supported by national funds. The funds provided by COST – less than 1% of the total value of the projects – support the COST cooperation networks (COST Actions) through which, with € 30 million per year, more than 30,000 European scientists are involved in - search having a total value which exceeds € 2 billion per year. This is the financial worth of the European added value which COST achieves. A “bottom up approach” (the initiative of launching a COST Action comes from the European scientists themselves), “à la carte participation” (only countries interested in the Action participate), “equality of access” (participation is open also to the scientific communities of countries not belonging to the European - ion) and “flexible structure” (easy implementation and light management of the research initiatives) are the main characteristics of COST. **Guide to Disaster-Resilient Communication Networks** Springer Nature This authoritative volume presents a comprehensive guide to the evaluation and design of networked systems with improved disaster resilience. The text offers enlightening perspectives on issues relating to all major failure scenarios, including natural disasters, disruptions caused by adverse weather conditions, massive technology-related failures, and malicious human activities. Topics and features: describes methods and models for the analysis and evaluation of disaster-resilient communication networks; examines techniques for the design and enhancement of disaster-resilient systems; provides a range of schemes and algorithms for resilient systems; reviews various advanced topics relating to resilient communication systems; presents insights from an international selection of more than 100 expert researchers working across the academic, industrial, and governmental sectors. This practically-focused monograph, providing invaluable support on topics of resilient networking equipment and software, is an essential reference for network professionals including network and networked systems operators, networking equipment vendors, providers of essential services, and regulators. The work can also serve as a supplementary textbook for graduate and PhD courses on networked systems resilience. **Cyberliteracy Navigating the Internet with Awareness** Yale University Press divThe Internet has changed our social spaces, our political and social realities, our use of language, and the way we communicate, all with breathtaking speed. Almost everyone who deals with the Internet and the new world of cyberspace communication at times feels bewildered, dismayed, or even infuriated. In this clear and helpful book, computer communications scholar Laura J. Gurak takes a close look at the critical issues of online communication and discusses how to become literate in the new mass medium of our era. In cyberspace, Gurak shows us, literacy means much more than knowing how to read. Cyberliteracy means being able to sort fact from fiction, to detect extremism from reasonable debate, and to identify gender bias, commercialism, imitation, parody, and other aspects of written language that are problematic in online communication. Active reading skills are essential in cyberspace, where hoaxes abound, advertising masquerades as product information, privacy is often compromised, and web pages and e-mail messages distort the truth. Gurak analyzes the new language of the Internet, explaining how to prepare for its discourse and protect oneself from its hazards. This book will appeal to anyone with an interest in the impact of the Internet on the practices of reading and writing and on our culture in general./DIV **Information Centric Networks** Wiley This book defines and examines Information-Centric Networks (ICNs). The authors describe ICNs from the precepts of content naming, routing by name, contentbased security, and innetwork caching. They discuss the history of content-centric proposals and present a detailed introduction on some current ICN architectures. Research challenges to be solved and some potential applications for ICNs are also identified. Information-Centric Networks (ICNs) is a promising and potential internet architecture meant to enable more efficient connections between users and the content they request. **Intelligent Integrated Energy Systems The PowerWeb Program at TU Delft** Springer This book presents research results of PowerWeb, TU Delft’s consortium for interdisciplinary research on intelligent, integrated energy systems and their role in markets and institutions. In operation since 2012, it acts as a host and information platform for a growing number of projects, ranging from single PhD student projects up to large integrated and international research programs. The group acts in an inter-faculty fashion and brings together experts from electrical engineering, computer science, mathematics, mechanical engineering, technology and policy management, control engineering, civil engineering, architecture, aerospace engineering, and industrial design. The interdisciplinary projects of PowerWeb are typically associated with either of three problem domains: Grid Technology, Intelligence and Society. PowerWeb is not limited to electricity: it bridges heat, gas, and other types of energy with markets, industrial processes, transport, and the built environment, serving as a singular entry point for industry to the University’s knowledge. Via its Industry Advisory Board, a steady link to business owners, manufacturers, and energy system operators is provided. **Performance Modelling and Evaluation of ATM Networks** Springer Asynchronous Transfer Mode (ATM) networks are widely considered to be the new generation of high speed communication systems both for broadband public information highways and for local and wide area private networks. ATM is designed to integrate existing and future voice, audio, image and data

services. Moreover, ATM aims to simplify the complexity of switching and buffer management, to optimise intermediate node processing and buffering and to limit transmission delays. However, to support such diverse services on one integrated communication network, it is most essential, through careful engineering, to achieve a fruitful balance amongst the conflicting requirements of different quality of service constraints ensuring that one service does not have adverse implications on another. Over recent years there has been a great deal of progress in research and development of ATM technology, but there are still many interesting and important problems to be resolved such as traffic characterisation and control, routing and optimisation, ATM switching techniques and the provision of quality of service. This book presents thirty-two research papers, both from industry and academia, reflecting latest original achievements in the theory and practice of performance modelling of ATM networks worldwide. These papers were selected, subject to peer review, from those submitted as extended and revised versions out of fifty-nine shorter papers presented at the Second IFIP Workshop on "Performance Modelling and Evaluation of ATM Networks" July 4-7, 1994, Bradford University. At least three referees from the scientific committee and externally were involved in the selection of each paper.

Multimedia Systems *Springer Science & Business Media* Multimedia Systems discusses the basic characteristics of multimedia operating systems, networking and communication, and multimedia middleware systems. The overall goal of the book is to provide a broad understanding of multimedia systems and applications in an integrated manner: a multimedia application and its user interface must be developed in an integrated fashion with underlying multimedia middleware, operating systems, networks, security, and multimedia devices. Fundamental characteristics of multimedia operating and distributed communication systems are presented, especially scheduling algorithms and other OS supporting approaches for multimedia applications with soft-real-time deadlines, multimedia file systems and servers with their decision algorithms for data placement, scheduling and buffer management, multimedia communication, transport, and streaming protocols, services with their error control, congestion control and other Quality of Service aware and adaptive algorithms, synchronization services with their skew control methods, and group communication with their group coordinating algorithms and other distributed services.

A Key of Hope *Amanda Redhead* Neldorailin, The land of Elves, Dwarves, Orcs, Humans, Horse Lords and Knights holds the key to Rose's past and to her future. A chance encounter with a dying sailor yields a letter and a key, propelling Rose to discover the mystery behind her heritage. Follow Rose on her fantastical journey fraught with danger and intrigue as she rushes headlong toward her destiny. "A Key of Hope" is Amanda Redhead's exciting introduction to the land of Nelderailin, where many fantastic tales yearn to be told.

Current Research Progress of Optical Networks *Springer Science & Business Media* Optical communication networks have played and will continue to play a prominent role in the development and deployment of communication network infrastructures. New optical systems and protocols will enable next generation optical networks to meet the diverse requirements from a wide range of new applications and services. Optical networks have evolved to become more flexible, intelligent and reliable. New optical switching architectures, technologies, and sophisticated control and management protocols have already enabled optical networks to be used not only in the core but also the metropolitan and access networks. The widespread deployment of optical communication networks will continue to have a big impact on our future lifestyle. Current Research Progress of Optical Networks is aimed to provide an overview on recent research progresses in optical networking with proposed solutions, survey and tutorials on various issues and topics in optical network technologies and services.

Modeling and Tools for Network Simulation *Springer Science & Business Media* A crucial step during the design and engineering of communication systems is the estimation of their performance and behavior; especially for mathematically complex or highly dynamic systems network simulation is particularly useful. This book focuses on tools, modeling principles and state-of-the-art models for discrete-event based network simulations, the standard method applied today in academia and industry for performance evaluation of new network designs and architectures. The focus of the tools part is on two distinct simulation engines: OmNet++ and ns-3, while it also deals with issues like parallelization, software integration and hardware simulations. The parts dealing with modeling and models for network simulations are split into a wireless section and a section dealing with higher layers. The wireless section covers all essential modeling principles for dealing with physical layer, link layer and wireless channel behavior. In addition, detailed models for prominent wireless systems like IEEE 802.11 and IEEE 802.16 are presented. In the part on higher layers, classical modeling approaches for the network layer, the transport layer and the application layer are presented in addition to modeling approaches for peer-to-peer networks and topologies of networks. The modeling parts are accompanied with catalogues of model implementations for a large set of different simulation engines. The book is aimed at master students and PhD students of computer science and electrical engineering as well as at researchers and practitioners from academia and industry that are dealing with network simulation at any layer of the protocol stack.

Handbook of Constraint Programming *Elsevier* Constraint programming is a powerful paradigm for solving combinatorial search problems that draws on a wide range of techniques from artificial intelligence, computer science, databases, programming languages, and operations research. Constraint programming is currently applied with success to many domains, such as scheduling, planning, vehicle routing, configuration, networks, and bioinformatics. The aim of this handbook is to capture the full breadth and depth of the constraint programming field and to be encyclopedic in its scope and coverage. While there are several excellent books on constraint programming, such books necessarily focus on the main notions and techniques and cannot cover also extensions, applications, and languages. The handbook gives a reasonably complete coverage of all these lines of work, based on constraint programming, so that a reader can have a rather precise idea of the whole field and its potential. Of course each line of work is dealt with in a survey-like style, where some details may be neglected in favor of coverage. However, the extensive bibliography of each chapter will help the interested readers to find suitable sources for the missing details. Each chapter of the handbook is intended to be a self-contained survey of a topic, and is written by one or more authors who are leading researchers in the area. The intended audience of the handbook is researchers, graduate students, higher-year undergraduates and practitioners who wish to learn about the state-of-the-art in constraint programming. No prior knowledge about the field is necessary to be able to read the chapters and gather useful knowledge. Researchers from other fields should find in this handbook an effective way to learn about constraint programming and to possibly use some of the constraint programming concepts and techniques in their work, thus providing a means for a fruitful cross-fertilization among different research areas. The handbook is organized in two parts. The first part covers the basic foundations of constraint programming, including the history, the notion of constraint propagation, basic search

methods, global constraints, tractability and computational complexity, and important issues in modeling a problem as a constraint problem. The second part covers constraint languages and solver, several useful extensions to the basic framework (such as interval constraints, structured domains, and distributed CSPs), and successful application areas for constraint programming. - Covers the whole field of constraint programming - Survey-style chapters - Five chapters on applications **Social Interactions in Virtual Worlds An Interdisciplinary Perspective** Cambridge University Press This cross-disciplinary exploration of MMOs and other complex online worlds melds work from computer science, psychology and social science.