

Telecommunications Infrastructure Security

SS7 Signalling Security

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Agenda

- SS7 Basics
- Example of SS7 protocol (ISUP) and related attacks
- SS7 and IP: the SIGTRAN evolution and problems
- A practical SS7 attack: Disabling incoming calls to any subscriber
- New attack perimeters: Femto cell attacks
- Getting secure

Ss7 Basics

Guy Pujolle

A red circular graphic with a gradient, appearing as a semi-circle or a partial circle, located to the right of the author's name.

Ss7 Basics:

SS7 Basics Toni Beninger, 1991 *SS7 Basics* Lawrence Harte, Richard Dreher, 2003 This introductory book explains the operation of the signaling system 7 SS7 and how it controls and interacts with public telephone networks and VoIP systems SS7 is the standard communication system that is used to control public telephone networks In addition to voice control SS7 technology now offers advanced intelligent network features and it has recently been updated to include broadband control capabilities local number portability and mobile communication services SS7 networks are now interconnecting with and operating on Internet data networks This book will help the reader gain an understanding of SS7 technology network equipment and overall operation It covers the reasons why SS7 exists and is necessary as well as step by step procedures that describe the actions that occur in the network SS7 Basics 3rd Edition is for the technical and the non technical reader alike SS7 network architecture including SSP SCP and STP operations Call processing control ISUP and broadband telephony applications BISUP Mobile application part MAP for communication with wireless systems Transaction capabilities part TCAP Operations Maintenance and Administration OMAP SS7 interaction with voice over data networks including SIP MGCP MEGACO and H 323 Transporting SS7 messages over IP networks using SIGTRAN and SCTP Number portability including local portability LNP service portability and geographic portability Intelligent Network IN and SS7 International SS7 systems *Wireless Basics* Harry E. Young, 1999 The third edition of the already popular line of Wireless Basics books explains how various wireless services work and their interconnection with traditional telephone networks It is a well known fact that wireless technology and services are continually changing Author and industry veteran Harry E Young understands these changes in the industry and provides descriptions and diagrams of typical interconnection arrangements for cellular paging PCS land mobile radio SMR and satellite systems

Fundamentals of Cellular Network Planning and Optimisation Ajay R. Mishra, 2004-05-21 By 2008 some 2 billion people will be using mobile phones and devices in many cases to access advanced data services Against this backdrop the need for efficient and effective network design will be critical to the success of increasingly complex mobile networks Simon Beresford Wylie SVP Nokia Networks With the complexity of the cellular networks increasing day by day a deeper understanding of the design and performance of end to end cellular networks is required Moreover all the types of networks from 2G 2.5G 3G seem to co exist Fundamentals of Cellular Network Planning and Optimisation covers end to end network planning and optimisation aspects from second generation GSM to third generation WCDMA networks including GPRS and EDGE networks All the sub systems of the network i.e. radio network transmission network and core network have been covered with focus on both practical and theoretical issues By bringing all these concepts under one cover this book becomes essential reading for the network design engineers working either with cellular service vendors or operators experts scientists working on end to end issues and undergraduate post graduate students Key Highlights Distinctly divided into four parts 2G GSM 2.5G GPRS EDGE 3G

WCDMA and introduction to 4G OFDM ALL IP WLAN Overview respectively Each part focuses on the radio transmission and core networks Concentrates on cellular network planning process and explains the underlying principles behind the planning and optimizing of the cellular networks The text will serve as a handbook for anyone engaged in the study design deployment and business of cellular networks

SS7 Basics Richard Dreher, Lawrence Harte, Toni Beninger, 2002 This introductory book explains how the public telephone network is coordinated through the use of signaling messages The SS7 common channel signaling has been standardized since the 1970 s and is used by almost all public telephone companies throughout the world If you are involved in telecommunications systems SS7 is part of your system This book is the perfect solution for those involved or interested in the operation and control of public telephone systems This book covers the reasons why SS7 exists and is necessary

Voice Over IP Fundamentals Jonathan Davidson, 2007 Previous ed by Jonathan Davidson James Peters 2000

Network Tutorial Steve Steinke, 2003-01-01 Network Tutorial delivers insight and understanding about network technology to managers and executives trying to get up to speed or stay current with the complex challenges of designing constructing maintaining upgrading and managing the network

Management, Control and Evolution of IP Networks Guy Pujolle, 2013-03-01 Internet Protocol IP networks have for a number of years provided the basis for modern communication channels However the control and management of these networks needs to be extended so that the required Quality of Service can be achieved Information about new generations of IP networks is given covering the future of pervasive networks that is networks that are always present Wi Fi the control of mobility and improved Quality of Service sensor networks inter vehicle communication and optical networks

A Deeper Perspective on the Fundamentals of Digital Communication, Security, and Privacy Protocols Kutub Thakur, Abu Kamruzzaman, Al-Sakib Khan Pathan, 2022-06-30 This book divided into three parts describes the detailed concepts of Digital Communication Security and Privacy protocols In Part One the first chapter provides a deeper perspective on communications while Chapters 2 and 3 focus on analog and digital communication networks Part Two then delves into various Digital Communication protocols Beginning first in Chapter 4 with the major Telephony protocols Chapter 5 then focuses on important Data Communication protocols leading onto the discussion of Wireless and Cellular Communication protocols in Chapter 6 and Fiber Optic Data Transmission protocols in Chapter 7 Part Three covers Digital Security and Privacy protocols including Network Security protocols Chapter 8 Wireless Security protocols Chapter 9 and Server Level Security systems Chapter 10 while the final chapter covers various aspects of privacy related to communication protocols and associated issues This book will offer great benefits to graduate and undergraduate students researchers and practitioners It could be used as a textbook as well as reference material for these topics All the authors are well qualified in this domain The authors have an approved textbook that is used in some US Saudi and Bangladeshi universities since Fall 2020 semester although used in online lectures classes due to COVID 19 pandemic

The Basics of Voice Over Internet Protocol Frank M. Groom, Kevin M. Groom, 2004 This introduction examines the

fundamentals of delivering voice over internet protocol VoIP service while exploring its potential in the communications market It analyzes this trend in depth addressing the underlying challenges and benefits and bringing readers up to date on the evolution of VoIP service

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