

<<无线局域网安全接入>>

图书基本信息

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前言

Networks have entered a wireless era. As a wireless communication technology , Wireless Local Area Network (WLAN) has been widely adopted in our daily life. Mobility and easy-deployment make WLAN devices commonplace in educational institutions , hospitals , manufacturing , inventory control , and the military , etc. In this context , we have witnessed an evolution of our society towards mobile e-commerce , e-business and e-government and towards an increasing dependence on wireless communication systems. Unfortunately , such an evolution brings new vulnerabilities and risks , especially in WLAN. It is now clear that the security access is essential to protect the networks. Therefore , effective solutions for the security access in WLAN should be studied from the architecture and protocols to realization. Recently , a substantial body of work on security access in WLAN has appeared in the literature of security. This has provided impetus for the deployment of WLAN. As the investigators of many scientific research projects of the WLAN security , the authors realize that it is a difficult job to design and analyze security access protocols or systems in WLAN. This book is born under such a background. The aim of this book is to deal with the various aspects of the security access in WLAN , among which , the security access architecture , security protocols , security management and evaluation , etc. , are studied in detail. The book is organized into the following 11 chapters.

Chapter 1 starts with an overview of the architecture and transmission technology of WLAN. Discussion of the IEEE 802.11 series standards , and the application and development trends of WLAN follow. The key issues of the WLAN security are analyzed and summarized next. Finally , to solve these problems , three kinds of architectures which we designed and implemented in the following chapters are overviewed.

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内容概要

Security Access in Wireless Local Area Networks From Architecture and Protocols to Realization deals with the method and technology of the WLAN security architecture, design and analysis of security protocols for WLAN, and WLAN security management. The book is intended for researchers in wireless communication, electrical and computer engineering, and for graduate students. The authors are with Xidian University, P. R. China, where Dr. Jianfeng Mai is a professor of computer science and the director of the Key Laboratory of Computer Networks and Information Security (Ministry of Education).

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章节摘录

版权页：插图：To satisfy the continuity of multimedia data streams, FT based on IEEE 802.11 becomes one of the key technologies needed to be solved urgently [1114]. The current FT scheme adopts the Proactive Neighbor Caching (PNC) [15] mechanism based on dynamic neighbor graphs, which prepositions the related information of STA to the neighbors of the associated APs and accomplishes the related procedures ahead of time. Because it reduces the rounds of the information exchange and the amount of information between STA and AP in the handoff process, thus the handoff latency is reduced. At present, the PNC scheme has been adopted by the IEEE standard and integrated into the specification of IAPP. However, in the PNC scheme, the STA's context is propagated to all neighboring APs. Therefore, the PNC scheme may result in high signaling overhead. Meanwhile, in the case of frequent handoffs, the scheme may lead to the cache overflow in AP and augment the delay. Then, it has been one of the issues urgently needed to be solved that how to not only effectively decrease the number of candidate APs, but also guarantee the fast completion of a handoff. Therefore, [15] proposed a selective neighbor caching (SNC) scheme. The scheme introduced a comparison between AP's handoff weights in neighbor graphs and an optimized threshold. Only those APs whose weights are higher than the threshold will be the targets to which the context of STA will be propagated. But there are still some redundancies in this scheme, since there is no consideration about the STA's mobility direction and QoS of services. In addition, the candidate AP sets chosen by weights cannot guarantee the completion of FT.

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