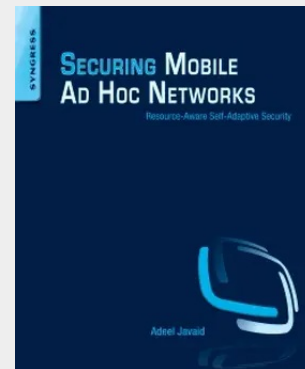


Securing Mobile Ad Hoc Networks

Resource-Aware Self-Adaptive Security

Mobile ad hoc networks (MANETs) are formed by a group of mobile nodes connected by using wireless networks without the need of a fixed infrastructure. The devices on the MANET can communicate with each other by direct peer-to-peer wireless communication when they are close to each other; otherwise they use multi-hop paths. Due to their node mobility support, decentralized architecture and dynamic routing capabilities, MANETs can be used as a stand-alone network for a group of mobile users. Although several routing protocols have been introduced in MANETs for efficient routing and scalable performance, Optimized Link State Routing (OLSR) has received particular attention recently. In order to reduce the flood of traffic messages in MANETs, OLSR uses Multipoint Relays (MPRs) as an internal mechanism. However, there are still a number of vulnerabilities and security issues with OLSR. Securing Mobile Ad Hoc Networks presents the latest research and methodologies for securing MPRs and OLSR, providing readers with an in-depth look at the key concepts and implementations behind secure MANETs. Securing Mobile Ad Hoc Networks provides researchers as well as practitioners with the first and most complete framework for the concepts and research being conducted around MANET security, including in-depth coverage of MANET architecture and routing protocols, performance issues, and MANET protocol security. The book also provides case studies and simulations of attack vectors such as Black Hole Attacks using the ns2 and ns3 simulators. - Presents the most current and leading edge research on Mobile Ad Hoc Networks (MANETs), including in-depth coverage of MANET architecture and routing protocols. - Focuses on research concerning Optimized Link State Routing (OLSR) and Multipoint Relays (MPRs), including current research on vulnerabilities and security issues with OLSR. - Provides simulations of key attack vectors such as Black Hole Attacks using the ns2 and ns3 network simulators. - Includes scenario-based experiments for MANET performance evaluation and a case study covering Tree Routing Protocol.



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