Intrusion Detection System for Ad hoc Mobile Networks

Abstract

Proactive security mechanism like authentication, confidentiality and non-repudiation are difficult to implement in MANETs. Some additional security necessities are always desirable like co-operation fairness, location confidentiality, data freshness and absence of traffic diversion. Traditional security mechanism (authentication, encryption) provide abstract level of security but
some reactive security mechanism and deep level of inspection is always required. Here local-distributed intrusion detection system for ad hoc networks has proposed. In the proposed distributed-ID, a smart agent in each mobile node analyzes the routing packets and also checks the overall network behavior of MANETs. It works like a Client-Server model using Markov process. The proposed local distributed- IDS shows a balance between false positive and false negative rate.

References

- “Cooperative Routing in Mobile Ad-hoc Networks: Current Efforts Against Malice and Selfishness.” By Sonja Buchegger, Jean-Yves Le Boudec.
- Wensheng Zhang, R. Rao, Guohong Cao, GeorgeKesidis “SECURE ROUTING IN ADHOC NETWORKS AND A RELATED INTRUSION DETECTION PROBLEM”.
- Panagiotis Papadimitratos and Zygmunt J. Haas. “Secure Routing for Mobile Ad Hoc Networks” In SCS Communication Networks and Distributed Systems Modeling and Simulation Conference. (CNDS 2002), San Antonio, TX, January 2002
- Ernesto Jiménez Caballero, “Vulnerabilities of Intrusion Detection Systems in Mobile Ad-hoc Networks-The routing problem”.
- Yinghua Guo and Steven Gordon “Ranger, a Novel Intrusion Detection System Architecture for Mobile Ad Hoc Networks”.
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- Muhammad Mahmudul Islam, Ronald Pose and Carlo Kopp. “An Intrusion Detection System for Suburban Ad hoc Networks”

Index Terms

Computer Science  Wireless

Keywords

MANET Intrusion Detection System (IDS)
security mechanism
proactive
reactive
Markov process
false negative and false positive