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IJCA Proceedings on International Conference on Emergent Trends in Computing and Communication

ETCC 2015 - Number 1

Year of Publication: 2015

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{bibtex}etcc4554.bib{/bibtex}

Abstract

In the recent years it has been a great challenge for the researchers to ensure security in Wireless Sensor Network (WSN). The traditional prevention based cryptographic algorithms cannot meet the security goals in a resource constrained wireless sensor network; these cannot also prevent the insider attacks. So a second line of defense called intrusion detection systems are developed to detect and alarm on various kinds of insider as well as outsider attacks in Wireless Sensor Networks. WSNs are susceptible to many kinds of attacks because of their open and harsh operating environment. Sybil attack is one of the dangerous attacks in terms of resource usages and poses threats to many security goals. In this paper, an algorithm called

Sybil attack Detection Algorithm (SDA) is proposed to detect and prevent the Sybil attack in the WSNs. Our proposed SDA algorithm is dynamic and accurate in detecting the Sybil attack that uses Mobile agent, threshold value, random key pre-distribution & random password generation. We are using random password and threshold value to distinguish and then for the confirmation of a legitimate node and a Sybil node. Moreover our algorithm helps in transmission of data in a more secured way by avoiding the Sybil attacks. We have simulated the proposed algorithm in NS2. We have checked the throughput and packet delivery ratio hence verified the detection performance of SDA in wireless sensor network.

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Index Terms

Computer Science Security

Keywords

Wireless Sensor Networks Mobile Agent Sybil Attack Detection Algorithm Intrusion Detection.