International Journal of Advanced Science and Technology
Vol. 29, No. 03, (2020), pp. 8786 - 8794

A Hybrid Secure Aware Routing Protocol for Authentication in MANET

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Abstract

Mobile nodes are the nodes which are roaming inside or outside the network in the absence of infrastructure. Due to that network may be corrupted and degraded if any attacker gets inside the network. It leads to more power consumption and least security. In this research work, a Hybrid Secure Aware Routing Protocol (HSARP) is introduced to meet the requirements of the QoS. It supports the balancing of power and security. It consists of three phases. In first phase, the discovery of multicast routes from source to sink node is done with the help of multicast route request packets. In second phase, the regional power distribution is adopted to increase the power efficiency based on the probability of average power concentration. In third phase, the secret sharing is illustrated based on three trust parameters i.e. data type, reliability of routes and node stability. Based on the extensive simulation results, HSRP produces better performance in terms of link failure rate, worm hole detection rate, detection time, overhead and end to end delay.

Keywords

QoS, Reliable Power Distribution Model, Multicast Routes, Power Concentration, Security and Detection Time.

1. Introduction

MANET is composed of several mobile nodes where it operates without access point. Mobile nodes have limited resource i.e. energy, link capacity, bandwidth. Routing is required if the forwarding of data packets from source to sink node occurs. In general cases, efficient data transmission includes route discovery, route maintenance and information transmission. Source node chooses the best path for packet transmission. The concept of multicast routing in ad hoc network consists of many senders and many receivers via multiple paths. The load balancing can be successfully attained in the presence of multiple links.

ISSN: 2005-4238 IJAST