Abstract

This paper proposes Secured Reliable Multipath Routing Protocol (SRMRP) using Distributed Trust Computation and Carrier Sense Multiple Access with Collision Intimation for Distributed Heterogeneous Mobile Ad-hoc Networks. This research aims at two main objectives. The first objective is to make the communication secured against attacks. For achieving this reference based trust security mechanism is proposed. The next objective is to provide reliable data communication in heterogeneous mobile ad hoc network. For achieving this adaptive carrier sense multiple access with collision intimation mechanism is employed. The simulations are done in NS2. This paper concerns much about real time mobile ad hoc networks i.e., heterogeneous natured. Hence we have simulated the mobile nodes with different capabilities such as transmission range, channel capacity and battery power. Extensive simulation results prove that our proposed SRMRP achieves better reliability in terms of increased throughput and packet delivery ratio. The security performance metrics such as the number(s) of detected malicious nodes and normalized control bytes are taken and SRMRP achieves better results when compared to existing AOMDV routing protocol.
Secured Reliable Multipath Routing Protocol (SRMRP) using Trust Computation and Carrier Sense Multiple Access with Collision Intimation (CSMA/CI) for Heterogeneous IP-based Mobile Ad-hoc Networks


Index Terms

Computer Science

Mobile Networks

Keywords

Mobile Ad hoc Networks  Multipath Routing  Trust Computation  Carrier Sense Multiple Access with Collision Intimation

Heterogeneous MANETs

IP Based MANETs