Abstract

A MANET (mobile ad hoc network) is a collection of independent nodes that communicate with each other by organizing a multi-hop radio network by sustaining connections that are decentralized. MANET has open medium, includes dynamically changing topology, absence of centralized monitoring points and less clear lines of defense, and because of this security in a MANET is a critical issue. Ad hoc on-demand distance vector (AODV) is a well-known routing algorithm. It is assailable to attacks like black hole and gray hole. In a black hole attack a malicious node act like ordinary node, but if a data packet passes through malicious node it consumes data packet and never forward it to neighboring nodes, whereas in a gray hole attack the malicious node will forward the data packet with selective data. In this paper we are presenting a defense mechanism for detection of cooperative black hole attack by multiple black hole nodes and the prevention of attack in multiple base stations. The simulation carried out on the proposed mechanism has produced results that elaborate the detection mechanism against the attack while maintaining a level of throughput in MANET.
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Cooperative Black Hole Detection Mechanism in Mobile Ad Hoc Network

Index Terms

Computer Science

Networks

Keywords

Mobile ad hoc network (MANET)  Black Hole  malicious node  Gray Hole  Routing  AODV.