Abstract

Mobile Ad-Hoc Networks (MANETs) type of Ad-hoc wireless network. Due to mobility of nodes, MANET more vulnerable to different types of attacks and security threats. To overcome these challenges Intrusion Detection System technique used. By using the schemes of EAACK, this paper proposed dynamic hierarchical intrusion detection architecture that addresses these challenges while finding specific and conventional attacks in MANET. The proposed structural design organized as a dynamic hierarchy. Dynamic hierarchy in which hierarchy organized as group of clusters, cluster heads are selected based on topology and other criteria. Routes are initialized by using AODV routing protocol. The usefulness of the architecture demonstrated via black hole attack scenarios in which attack is detected and removed. In this paper we propose Dynamic Hierarchical Enhanced Adaptive Acknowledgement (DH-EAACK) architecture which has better performance in terms of packet delivery ratio and throughput due to cluster based IDS. Comparing results of existing systems with proposed system when there are 30% malicious nodes in the network PDR is 0.9% better than existing techniques. End to end delay, routing overhead has less performance compared with existing due to black hole nodes in the network. Future work can be extended by using election algorithms to elect cluster head and provide more security by using hybrid (AES and MD5) cryptographic algorithm.
References


DH-EAACK Secure Intrusion Detection System to detect Black Hole Attack in MANET


Index Terms

Computer Science Security

Keywords

Ad-hoc On demand Routing Protocol  Attacks  Digital Signature  Intrusion Detection System (IDS)

Mobile Ad-hoc Network
Security.