Intrusion Detection In MANET Using Game Theory

Authors : S. B. Kumbalavati, J. D. Mallapur, K. Y. Bendigeri

Abstract : A mobile Ad-hoc network (MANET) is a multihop wireless network where nodes communicate each other without any pre-deployed infrastructure. There is no central administrating unit. Hence, MANET is generally prone to many of the attacks. These attacks may alter, release or deny data. These attacks are nothing but intrusions. Intrusion is a set of actions that attempts to compromise integrity, confidentiality and availability of resources. A major issue in the design and operation of ad-hoc network is sharing the common spectrum or common channel bandwidth among all the nodes. We are performing intrusion detection using game theory approach. Game theory is a mathematical tool for analysing problems of competition and negotiation among the players in any field like marketing, e-commerce and networking. In this paper mathematical model is developed using game theory approach and intruders are detected and removed. Bandwidth utilization is estimated and comparison is made between bandwidth utilization with intrusion detection technique and without intrusion detection technique. Percentage of intruders and efficiency of the network is analysed.

Keywords : ad-hoc network, IDS, game theory, sensor networks

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