

Abstract

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Cluster-based Intrusion Detection Using Mobile Agents for Mobile Ad-Hoc Networks

Security in mobile ad hoc networks (MANETs) is difficult to achieve, notably because ad hoc networks are vulnerable to attacks due to the dynamically changing topology, distributed nature, lack of infrastructure and the lack of a centralized monitoring management point. In this paper, we present a novel intrusion detection system (IDS) by using mobile agents over cluster-based routing protocol (CBRP) for MANETS. The reliance on mobile agents for IDS is desirable due to lightweight computation, reduction in network bandwidth usage by moving data analysis computation to the location of the intrusion data, support of heterogeneous platforms, flexibility in creating distributed IDS for clustered mobile ad-hoc network. The proposed IDS is evaluated through the use of the ns-2 network simulator. Preliminary performance evaluation results illustrate the efficiency of the proposed IDS in terms of attack detection rate and percentage of false alarms.