Prevention of Multiple Coordinated Jellyfish Attacks in Mobile Ad Hoc Networks

Abstract

Mobile Ad hoc Networks (MANETs) consist of self-governed nodes, they have no fixed infrastructure. They are stand alone or connected to the bigger internet as per the different applications. The dynamic nature of MANETs adds many challenges to the network management techniques. Likewise, their special characteristics such as the lack of infrastructure, self-government, mobility, and limited resources makes them vulnerable to a lot of attacks. Reputation systems can help mitigating attacks. Trust management using a reputation mechanism is considered as a vibrant security solution to enable the collaboration of MANETs. In this paper, we propose a Functional REPutation system for Ad hoc Networks, (FREPAN), which aims to improve the MANETS performance and mitigate selfishness and misbehavior attacks' effects. The overall system structure is introduced and its performance is tested under the presence of the jellyfish attacks.
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Index Terms

Computer Science          Networks

Keywords

Ad hoc networks; Jellyfish MANETs; misbehavior; reputation; selfishness; trust.