Ad-hoc Network Secured via Trust Computing

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Authors:
Rashmi Singh, Sudhir Dawra

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Abstract

Ad hoc network consist of a collection of wireless nodes, all of which may be mobile, dynamically creates a wireless network topology amongst them without using any fixed infrastructure. Nodes communicate with each other by passing data and control packet from one node to another. The execution and survival of an Ad-hoc network is rely upon the co-operative and trusting nature of its nodes. Ad-hoc network are vulnerable to passive and active attacks by malicious nodes due to the independent movement of nodes. Several protocols have been developed to secure Ad-hoc networks using cryptographic schemes, but all dependent on the existence of central trust authority. The presence of central trust authority is an impractical requirement for Ad-hoc networks, so in this Paper we present a trust model that doesn’t rely on central trust authority. In our model we make use of trust agents that reside on network nodes. Each agent operates independently and maintains its individual trust value. An agent gathers data from all events & assigns weights to each event and computes different trust levels based upon them. Each trust agent basically performs the three functions: Trust Derivation, Quantification, and Computation.
References

3. Asad Amir Pirzada and Chris McDonald, "Establishing Trust In Pure Ad-hoc Networks"

Index Terms

Computer Science

Wireless

Keywords

AODV, Trust, Security, Ad-hoc, Networks, Protocols