Abstract

Many emerging commercial and military applications require secure multicast communication in adhoc environments. Secure multicast communication in mobile adhoc networks is challenging due to its inherent characteristics of infrastructure-less architecture with lack of central authority, high packet loss rates and limited resources such as bandwidth, time and power. Hence key management is the fundamental challenge in achieving reliable secure communication using multicast key distribution for mobile adhoc networks. This paper proposes and evaluates the performance of an new cluster-based multicast tree algorithm with destination sequenced distance vector routing protocol to provide efficient and reliable multicast key distribution. Simulation results in NS2 accurately predict the performance of proposed scheme in terms of energy, latency, key delivery ratio and packet drop rate under varying network conditions. This proposed scheme achieves reliability, while exhibiting low
packet loss rate with high key delivery ratio compared with the existing scheme.

Reference


Index Terms
Computer Science
Network Security

Key words
Mobile Adhoc Networks
Multicast
Key Distribution
Cluster based multicast tree