Abstract

An increasing growth has been witnessed in the last few year with respect to development of wireless and mobile communication networks. In MANETs, nodes are able to communicate through the use of wireless mediums, constituting dynamic topologies. The certificate-based authentication has a positive edge in wired networks. It's a significantly arduous task to adapt a certificate based authentication protocols for mobile ad hoc networks due to absence of fixed infrastructure or centralized management. A traditional certificate-based authentication system depends on a fixed trusted Certificate Authority (CA). In this case Certificate Authority (CA) takes the responsibility for the establishment, distribution, renewing, and revocation of certificates. The consideration of the fixed centralized network is not practically possible in MANETs, because of issues such as regular link breakdown, node mobility, and inadequate wireless medium. The numbers of approaches have been introduced, which focus on the challenges to adapt certificate-based authentication in a distributed way in mobile ad hoc networks. In this paper, some issues related to performance analysis of exiting authentication schemes have been discussed.
So, there is a need to construct a common framework to evaluate the performance of certificate based authentication protocols for MANETs. This framework is based on two pillars. One is to survey some of the existing authentication mechanisms for MANETs and identify the needs of a secure authentication mechanism for MANETs in the context of distributed authentication. Second is the derivation of metrics to evaluate the performance of certificate based authentication schemes is done.

References

1. Internet X.509 Public Key Infrastructure Certificate and CRL Profile - RFC 2459.


19. ANNE MARIE HEGLAND, ELI WINJUM, STIG F. MJØLSNES, CHUNMING RONG
IEEE Communications Surveys & Tutorials • 3rd Quarter 2006

Index Terms

Computer Science      Networks

Keywords

Authentication schemes, ad-hoc and sensor networks, mobility model, metrics evaluation.