Abstract

MANET (Mobile Ad-Hoc Network) a unique network which provides communication between mobile nodes available outside or within the radio range. This unique feature migrated from wired network to wireless network and resulted in the security issues. So, there is need to secure the MANETs. As compared to other types of networks, MANETs are more vulnerable to different attacks such as black hole attack, gray hole attack, wormhole attack, etc. MANET decides a radio range within which node can move and can feasibly transmit the data. And if any of the nodes migrates from one radio range to another, it relays the messages to their neighbors. This means that two communicating nodes are notable to exchange messages if those nodes exceed the radio range. To avoid these types of attacks, different Intrusion Detection System (IDS) in MANETs are introduced to follow secure data transmission. In this paper, a secure IDS plays an important role and gives the system which improves the efficiency of EAACK (Enhanced Adaptive Acknowledge) and is compared with different IDS in MANETs using RSA, AES and ZRP algorithms. RSA algorithm is used for encryption and decryption of the message to securely transmit data using mathematical model. AES algorithm is combinely
used with RSA. And ZRP (Zone Routing Protocol) divides network into small zones to decide the route with nearby nodes and ensure the authentic path in the mobile network.

References

2. Vehbi C. Gungor, Member, IEEE, and Gerhard P. Hancke, Senior Member, IEEE IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS, VOL. 56, NO. 10, OCTOBER 2009 ?Industrial wireless sensor networks: Challenges, design principles, and technical approach.
7. Elhadi M. Shakshuki, Senior Member, IEEE, Nan Kang and Tarek R. Sheltami, Member, IEEE IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS, VOL. 60, NO. 3, MARCH 2013 "EAACK-A Secure Intrusion-Detection System for MANETs”.
9. Khalidoun Al Agha, Senior Member, IEEE, Marc-Henry Bertin, Tuan Dang, Member, IEEE, Alexandre Guillon, Member, IEEE, Pascale Minet, Thierry Val, and Jean-Baptiste Viollet IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS, VOL. 56, NO. 10, OCTOBER 2009 "Which Wireless Technology for IndustrialWireless Sensor Networks? The Development of OCARI Technology”.
10. K.P.Manikandan and Dr.R.Satyaprasad "Analysis and Diminution of Security Attacks on Mobile Ad hoc Network "JCA Special Issue on Mobile Ad-hoc Networks MANETs” 2010.

Index Terms

Computer Science
Networks
Keywords

Hybrid Cryptography, Zone Routing Protocol, AES, RSA, IDS in Manets