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RESEARCH ARTICLE

AN ELLIPTIC CURVE CRYPTOGRAPHY BASED ENHANCED ADAPTIVE ACKNOWLEDGMENT (ECC-EAACK) INTRUSION DETECTION SYSTEM

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Abstract – *MANET is a new wireless network technology increasingly used in many applications. These networks are more vulnerable to attacks than wired networks. Since they have different characteristics, conventional security techniques are not directly applicable to them. Intrusion detection system (IDS) is one of the most active fields of research in Mobile Ad-hoc Network's (MANET) field. Researchers currently focus on developing new prevention, detection and response mechanism for MANETs. The results demonstrated positive performances against Watchdog, TWOACK, and AACK in the cases of receiver collision, limited transmission power, and false misbehavior report. Packet-dropping attack has always been a major threat to the security in MANETs. In this research work, novel IDS named EAACK protocol using ECC is specially designed for MANETs and compared it against other popular mechanisms in different scenarios through simulations. In this paper, we propose and implement a new intrusion-detection system named Elliptic Curve Cryptography Based Enhanced Adaptive ACKnowledgment (ECC-EAACK) specially designed for MANETs demonstrates higher malicious-behavior-detection rates in certain circumstances while does not greatly affect the network performances.*

Keywords – *Digital signature, Elliptic curve cryptography algorithm (ECC), Mobile Ad hoc NETWORK (MANET), Enhanced Adaptive ACKnowledgment (EAACK)*
