

An enhanced 4-way technique using cookies for robust authentication process in wireless network

Pankaj Dadheech *

Ankit Kumar

Chothmal Choudhary

Mahender Kumar Beniwal

Sanwta Ram Dogiwal

Department of Computer Science & Engineering

Swami Keshvanand Institute of Technology

Management & Gramothan

Jaipur 302017

Rajasthan

India

Basant Agarwal

Department of Computer Science & Engineering

Indian Institute of Information Technology Kota

MNIT Campus

Jaipur 302017

Rajasthan

India

Abstract

In Wireless Local Area Network (WLAN) IEEE802.11, during the connection establishment four way handshake approaches is used for authentication. 4-way handshake approach, thought has been worked upon by many researchers, but this approach has some inadequacies like Denial of Service (DoS), Memory Exhaustion (ME), Distributed Denial of Service (DDoS) and flooding attacks. A solution for aforementioned vulnerabilities is proposed in this work. The proposed work is an enhancement in 4-way handshake process for more robust authentication process. This is done by encryption of message-1 by using effective encryption techniques; message-2 and message-3 will be secured by a cookie packet, encrypted by secret key. The proposed 4-way handshake process is an improvement over the existing 4-way handshake used in IEEE802.11i. To show effectiveness and correctness, various simulations are performed and also compared with existing 4-way handshake technique.

*E-mail: pankajdadheech777@gmail.com