

A new noval approach for malicious attack in 6lowpan technology

The increasing proliferation of Internet of Things (IoT) devices has led to the widespread adoption of 6lowpan technology, which enables IPv6 communication over low-power wireless personal area networks. However, with the growth of IoT devices, the risk of malicious attacks on 6lowpan networks has also escalated. This paper proposes a novel approach to mitigate these attacks and enhance the security of 6lowpan technology.

Our approach involves a multi-layered security framework that incorporates both preventive and reactive measures. At the network layer, we propose the use of secure routing protocols and access control mechanisms to ensure only authorized devices can participate in the network. Additionally, we employ intrusion detection and prevention systems to monitor network traffic and identify any suspicious activities.

Furthermore, at the transport layer, we introduce encryption techniques to secure data transmission and prevent unauthorized access. This includes the implementation of secure communication protocols such as Transport Layer Security (TLS) or Datagram Transport Layer Security (DTLS) to encrypt data and authenticate devices.

To address the specific challenges posed by 6lowpan networks, we leverage lightweight cryptography algorithms that provide robust security while minimizing the computational and energy requirements of IoT devices. These algorithms are designed to ensure efficient encryption, authentication, and key management without compromising the performance of 6lowpan networks.

In addition to these preventive measures, our approach also includes a proactive incident response system. This system uses anomaly detection techniques to identify potential attacks and triggers automated countermeasures to mitigate the impact. Moreover, we emphasize the importance of regular security updates and patches to address any vulnerabilities in 6lowpan devices and software.

Through the adoption of this novel approach, we aim to significantly enhance the security of 6lowpan technology and mitigate the risk of malicious attacks. By combining preventive measures, lightweight cryptography, and proactive incident response, our framework provides a comprehensive solution for securing 6lowpan networks and ensuring the integrity and confidentiality of IoT data.