ABSTRACT

Along with the rapid development of technology, a concept emerged to take advantage of technological developments, namely the Internet of Things (IoT). But behind these developments is an increasingly concerning aspect: data theft. Based on these problems, this research designs a security system that can guarantee data validity using the ECDSA (Elliptic Curve Digital Signature Algorithm) method, then sends it via the HTTP protocol and stores the data in PHP MyAdmin.

The research conducted QoS testing and memory usage analysis on IoT security systems that have used the ECDSA security algorithm. The ECDSA security algorithm system was tested using data sniffing scenarios. The results of the QoS test with ECDSA obtained a delay of 52.02 ms when ECDSA was applied and 51.91, throughput values each obtained results of 3114.90 kb/s when using ECDSA and 2347.75 kb/s when not implementing ECDSA packet loss testing each gets a value of 0%. Memory consumption when ECDSA is not implemented, RAM memory consumption is 29692 bytes (37%) and IRAM is 61267 bytes (93%), while when ECDSA is implemented RAM memory consumption is 29692 bytes (38%) and IRAM is 61267 bytes (94%).

Keywords: Kata kunci: ECDSA, HTTP, Internet of Things, data sniffing, memory usage, QoS