

## Abstract

*Mobile Ad-Hoc Network (MANET) is a wireless network into a solution in certain condition, by simply relying on existing devices, the devices can communicate without any additional infrastructure. With wireless-fidelity capabilities in peripheral devices, nodes can make sending messages to a specific node. The nodes in the MANET network has routing capabilities, like a router. On MANET routing protocols there are several types such as AODV, DSDV, TORA, and so forth that have the characteristics of each in the discovery routing pathway. Because it had no special infrastructure to perform routing and node-node is mobile then its routing mechanism has low security.*

*Blackhole attacks and Wormhole attacks in MANET is an attack that attacks on AODV routing mechanism with the characteristics of a typical attack. In this thesis performed simulations blackhole and wormhole attacks, as well as modification of AODV protocol as a solution to maintain performansinya when attacked by blackhole or wormhole*

*The purpose of this study was to compare the performance of AODV routing protocol modifications and standard AODV against when performed blackhole and wormhole attacks. The results obtained are the blackhole and wormhole attack can decrease network performance parameters that significantly viewed from a large test packet loss in the range 70-80%, and a big delay. By modifying AODV shown to maintain network performance, with a value of packet loss in the range of 10%, and a small delay.*

**Keywords:** *MANET, AODV, Wormhole attack, Blackhole attack, Packet loss, Delay*