

**UNIVERSITI TEKNOLOGI MARA**

**PERFORMANCE ANALYSIS OF  
WORMHOLE ATTACK ON AODV IN  
MANET**

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**BACHELOR OF COMPUTER SCIENCE (HONS.)  
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## **SUPERVISOR'S APPROVAL**

### **PERFORMANCE ANALYSIS OF WORMHOLE ATTACK ON AODV IN MANET**

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This thesis was prepared under the supervision of the project supervisor, Supervisor's Name. It was submitted to the Faculty of Computer and Mathematical Sciences and was accepted in partial fulfilment of the requirements for the degree of Bachelor of Information Technology (Hons) Data Communication and Networking.

Approved by

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JULY 18,2022

## **STUDENT DECLARATION**

I certify that this thesis and the project to which it refers is the product of my own work and that any idea or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.

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## ABSTRACT

The mobile ad hoc network (MANET) is a type of wireless network that is decentralized. An ad hoc network is one that does not require fixed infrastructure, such as routers or access points, to function. Instead, every node participates in routing by sending packets to other nodes, and the routing algorithm dynamically decides which nodes should send which packets to which destinations. Every node in a MANET can go in any direction, therefore they all switch up their connections frequently as a result. Each must forward traffic that is unrelated to its own usage, requiring it to function as a router. MANET routing protocols such as AODV contain numerous security bugs, making certain types of network attacks on mobile ad hoc networks possible. wormhole attack which believed to be the dangerous network attack. This is because of the unusual form of tunnel attack between two malicious nodes, where a malicious node attracts all traffic to the tunnel, forwards it to another malicious node at the tunnel's other end and replays it throughout the network. Once the Wormhole tunnel is established, it can be used to launch various attacks such as routing attacks, packet dropping, and spoofing. In this paper, the purpose of this research to examine and evaluate the performance of routing protocol, AODV Both "with" and "without" a wormhole attack. Essentially, the simulation is carried. with size of area is 500m×500m, Network Simulator 2 (NS2) was used for 120 seconds across three scenarios with a range of node counts. The results showed that AODV was not more effective under wormhole attack since it experienced lower throughput and higher end-to-end delay.

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