Abstract

'Mobile ad hoc network (MANET)' is an infrastructure less, self controlled wireless network it doesn’t need any centralized control so it can form and deform anywhere. Several freely movable mobile nodes with wireless connectivity can construct this type of network anywhere in no time, open connectivity and lack of central infrastructure enables the mobile nodes to freely exchange information and data with each other using radio signals. With this type of open connectivity and absence of centralized control MANET is vulnerable to many kinds of attacks and 'wormhole attack' is also present in those attacks. It is the most powerful attack and very difficult to detect in 'wormhole attack'; two collaborating attacker nodes occupy strong strategic locations in two different ends of the network. By occupying dominant positions these two nodes can cover complete network and advertise to have the smallest route for transmitting data. The two attacker nodes are linked with a high speed wireless transmission link which is called wormhole tunnel. A very efficient solution of 'wormhole attack' is discussed in this paper. The objective of our research work is to discover the alternative paths between the two communicating nodes. Then after calculating length of every alternative path we found that the length of alternative path is
much larger than the path including wormhole tunnel.

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**Index Terms**

Computer Science  
Security

**Keywords**

AODV  
MANET  
Malicious node  
Packet drop ratio  
Wormhole Attack.