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## MOBILE ADHOC NETWORK ROUTING PROTOCOLS: PERFORMANCE EVALUATION & ASSESSMENT

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### ABSTRACT

*Mobile Adhoc Networks (MANETs) is a form of wireless networks that lack fixed infrastructure and centralized routers, as opposed to wired networks' routers or managed wireless networks' access points. One of the most difficult difficulties with MANETs is routing. The primary goal of routing algorithms is to construct efficient routes between nodes so that messages can be sent on time. Many routing protocols have been created to aid in the routing of MANETs. The aim of this study is to give a study on several popular MANET routing protocols, including OLSR, TORA and AODV. The goal of this study is to analyze MANET's routing protocol performances based on performance metrics such as data packet, overhead, delivery ratio, throughput, and end-point delay using the OPNET simulation program. We model a MANET in which all nodes receive FTP traffic from a single source (FTP server). As a result of this research, the results would also represent a case in which the MANET gets traffic from another network through a similar. According to our findings, OLSR dominated the network with the most routing traffic. TORA is the second, AODV third and DSR is the last. All protocols have a poor packet delivery ratio of*

up to 59 percent. This degradation is anticipated as a result of massive retransmissions in the network caused by the use of TCP traffic. In terms of throughput and end-to-end latency, OLSR outperforms TORA, DSR and DSR.

**KEYWORDS:** *Mobile Adhoc Network (MANETs), Evaluation, Routing Protocols, TORA, DSR, DSDV, AODV, OLS, Overhead, Data Packet Latency, Throughput.*

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