Splitting of traffic allows the establishment of many paths between a pair of source and destination node in mobile ad hoc network. Splitting of traffic is typically proposed in order to increase the reliability of data transmission, to minimize the mean system delay and to provide load balancing. In this paper, we design for each path a queuing delay based traffic distribution scheme and implement a k-path routing that allows a given source node to send the data to a given destination node in a MANET. This approach of traffic distribution can increase the reliability of network system, provides the load balancing and minimization of system delay. The simulation results reveal that splitting of traffic approach perform better than the shortest path routing in terms of load balancing, reliability of network and in a minimum mean delay for the whole network.

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**Index Terms**

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