

## Abstract

Mobile Ad Hoc Networks(MANETs) are becoming an attractive solution to the services that require flexible establishment, dynamic and low cost wireless connectivity. Since nodes are mobile, routing results vary significantly with the underlying mobility model. So, modeling (nodes as well as wireless links between them) plays a critical role in the performance analysis of MANETs. This work involves modeling MANETs in two ways. In the first model, nodes are modeled as static and wireless links between a pair of nodes are available or unavailable for exponential durations. When the link is available, nodes are connected and can have data transmission and data are lost if the link is not available as the nodes are not connected. Second model involves mobility being captured by making the servers go ON/OFF for exponential amount of time, and no departure takes place while server is on vacation. This way one does not lose packets but the queuing delay increases. In this work, these two queuing networks are proposed to study to performance measures of MANETs. Numerical results are derived using mathematical equations and then verified through simulation.