Abstract

Mobile Ad hoc Network (MANET) is a collection of wireless mobile nodes that dynamically form a network temporarily without any support of central management. Moreover, every node in MANET moves arbitrarily making the multi-hop network topology to change randomly at uncertain times. In this paper proposed a Path Establishment & Maintenance Algorithm (PE&MA) that optimizes the established routes when feasible without incurring extra overhead. By utilizing promiscuous mode of operation, sender node, the border neighbor node within each zone to forward a packet, hop counts embedded in IP optional header of data packets to find shorter paths. PE&MA avoid unnecessary aggressive and ephemeral route updates, which improves the protocol performance. Routing path optimality is important as optimal path reduces the packet drop ratio, end-to-end delay, and reduces energy dissipation of end-to-end data transmission. It will also be easier to secure multicast routing. PE&MA for ZRP fits well for MANETs where bandwidth is limited, topology changes frequently, power is constrained and security problem is serious. Simulation results are presented to support our claim. In this paper the result based on metrics such as throughput, packet delivery ratio and average end-to-end
Design and Implementation of Path Establishment and Maintenance Technique for MANETs

delay by using the NS-2.31 simulator.

References

Index Terms

Computer Science

Networks

Keywords

MANET, AODV, Nodes, Wireless, Delay