Abstract

Mobile ad hoc networks are generally assumed to be equipped with omni directional antennas. However, it may be possible to improve the network performance by using directional antennas. Complexities of routing among the nodes are increasing due to the highly dynamic nature of the mobile ad hoc network results in frequent change in network topology. The routing protocols are faced with the challenge of producing multi-hop routing under host mobility and bandwidth constraint. To find out whether directional antennas are beneficial to ad hoc networks, it is
mandatory to evaluate the effects of directional antennas on performance of routing protocols. In this paper, analysis and comparisons of various routing protocols such as: Ad hoc On Demand Distance Vectoring Routing Protocol (AODV), Dynamic Source Routing (DSR) and Dynamic MANET On demand Routing (DYMO) have done. We have determined the average end to end delay, average jitter and throughput for omni- directional as well as directional antenna based routing protocols in MANETs. Random waypoint mobility is used in this simulation.

References

- (DSDV) for Mobile Computers. Proc. ACM SIGCOMM, 234-244.
- S. Keshav. An Engineering Approach to Computer Networking: ATM networks, the Internet, and the Telephone Network. Ch. 11, Addison Wesley
Performance of Routing Protocols in MANETs with Node Density and Mobility using Omni and Directional Antenna


Index Terms

- Computer Science
- Wireless Communication and Mobile Networks

Keywords

- Directional antenna
- Mobile Ad hoc Networks (MANETs)
- AODV
- DSR
- DYMO
- Node Mobility and Node Density