Abstract

Mobile ad hoc network is a self-directed structure of mobile nodes connected by wireless links. All nodes operate not only as an end system, but also as work as a router to forward the packets. Ad hoc wireless networks are characterized by multi-hop wireless connectivity, infrastructure less and habitually changing topology. It may be necessary for one mobile node to schedule other hosts for forwarding a packet from source to destination node due to the constrained transmission range of wireless network interfaces. Therefore a self-motivated routing protocol is required for these networks to work properly. A number of Routing protocols have been created to achieve this task. In this paper, a comparative analysis of four reactive routing protocols namely AODV, AOMDV, DSR and CBRP is done. Here CBRP is also a hierarchical routing protocol. This paper is aimed to analyze the adequacy of considered routing protocols in an energy constrained environment under varying mobility and pause time. These protocols have been analyzed extensively for various performance parameters (energy consumption, delay, throughput, Packet Delivery Ratio etc.) over different network scenarios. Simulation results show that none of the protocol surpasses other for all considered scenarios. However, CBRP has produced better results in terms of throughput, normalized routing load and delay while AOMDV is a better choice for energy related parameters. Simulation results of the paper are very helpful for the wise selection of the energy efficient base routing approach to
scale MANETs.

References

- Integration of mobile ad-hoc networks, EU project DAIDALOS, Susana Sargento, Institute of Telecommunications.
- C. Perkins, &quot;Ad hoc on demand distance vector (AODV) routing&quot;, RFC 3561, July 2003.
- Mahesh K. Marina and Samir R. Das, "Adhoc Multipath on Demand Distance Vector Routing", Published online in Wiley Inter science, 2006. Pages: 969-988.

Index Terms

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Keywords

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