Abstract

Mobile Ad-hoc Networks (MANETs) are the one where each node participating has many roles assigned, that is of a receiver, transmitter and router. Hence, energy in abundance is expected to be expended on each role to achieve the normal working. Also, mobility factor of this infrastructure-less administration forces the nodes to confide on battery energy. Battery being a limited entity fails to fulfill the high demand of energy with time. Scarcity of battery life and the additional energy requirements for supporting network operations (e.g. routing) inside every node, make the energy conservation one of the peer concern in ad hoc networking. Significant research effort has been made on efficient use of energy. Several exemplary techniques include transmission power control, load distribution, power management and sleep mode approach. This paper takes up a new optimized energy consumption algorithm emanated from power management technique to be put into effect on Optimized Link State Routing (OLSR) protocol. The procedure follows a threshold value for each node that indicates whether the node should participate in path discovery for a packet. Eventually, the contrast behavior of OLSR is examined. For that, extensive simulations have been carried with a network setup, such that the nodes less than this specified threshold value get eliminated from route. Comparison graphs plotted for new Energy Threshold OLSR (ET-OLSR) and OLSR conclude that performance of new protocol outshines in terms of energy consumption and packet delivery.
ratio.

References

- RFC 3626, IETF organisation.
- Chansu Yu, ben Lee, Hee Yong Yum, "Energy Efficient Routing Protocols for Mobile Ad Hoc Networks", research supported in part by Cleveland State University, EFFRD Grant No. 0120-0630-10.
ET-OLSR: Energy based Threshold Optimized Link State Routing for MANETs


Index Terms

Computer Science

Communications

Keywords

OLSR  Energy threshold  Energy consumption  Energy conservation  Power consumption

Energy aware algorithms