Abstract

Studies of ad hoc wireless networks are rapidly gaining popularity due to its varied and innovative applications. Medium Access Control (MAC) protocols in such networks are responsible to coordinate access among active nodes. Wireless nodes are largely powered by batteries which restricts the quantity of energy available to the nodes. Routing for wireless nodes is incorporated with power saving mechanisms to conserve energy. The most common techniques for power saving is by allowing a node to be in sleep state when possible or by varying transmitting power to reduce energy consumption. The energy saving power control can possibly be used to increase spatial reuse of the wireless channel and at the same time reduce power consumption. In this paper, a MAC protocol is proposed which achieves better spatial reuse of spectrum due to power adjustments established on the number of neighbors in the two-hop neighborhood. Simulation results show improved performance compared to MAC-DCF.
A Two Hop Power Adaptive MAC Protocol for Densely Populated Wireless Networks

- Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications, IEEE Std. 802. 11, Jan. 1999


Index Terms

Computer Science

Wireless

Keywords

Power Control  Medium Access Control (MAC)  Energy Saving