Abstract

In multi-hop wireless ad-hoc networks, designing energy-efficient routing protocols is critical since nodes are power-constrained. However, it is also an inherently hard problem due to two important factors: First, the nodes may be mobile, demanding the energy-efficient routing protocol to be fully distributed and adaptive to the current states of nodes; second, the wireless links may be uni-directional due to asymmetric power configurations of adjacent nodes. In this paper, I propose a fuzzy-controlled power-aware routing protocol (FPRP) that dynamically makes local routing decisions so that a near-optimal power-efficient end-to-end route is formed for forwarding data packets. The protocol is fully distributed such that only location information of neighboring nodes are exploited in each routing node. Simulation results firmly establish the effectiveness of the protocol.
Reference

- http://isi.edu/nsnam/ns

Index Terms

Computer Science Wireless

Key words

Ad Hoc Network fuzzy controller power-awareness lifetime status router