Abstract

Mobile ad hoc networks (MANETs) are characterized by dynamic topology, limited channel bandwidth and limited power at the nodes. Because of these characteristics, paths connecting to the source nodes with destinations may very unstable and go down at any time, making communication over ad hoc networks difficult. Energy efficiency is a limiting factor in the successful deployment of MANETs, because nodes are expected to rely on portable, limited power sources. Moreover, energy conservation is extremely challenging in multi-hop environments, where the mobile nodes should also consume energy to route packets for other nodes and to guarantee the connectivity of the network. In this paper, we propose a Power-Aware Multiple Path Multicast Adhoc On Demand Distance Vector (PAMPMAODV) for MANETs. In order to utilize the battery effectively a different strategy has been proposed for route selection. The route selection process has been designed to select multiple routes based on hop count, end-to-end delay and residual battery capacity. The PAMP-MAODV protocol has been implemented using the group learning module of VCR and compared with MAODV and MP-MAODV routing protocols for parameters such as network traffic, the node speed, the
network area, throughput, control overhead, number of receivers and SD of Battery Energy Used. It better resulted in load balancing, minimal power consumption, minimal packet delays and prevents unnecessary control messages.

Reference


Index Terms

Computer Science

Wireless Networks

Key words

VCR

MAODV

MP-MAODV

PDA