

Performance Evaluation of Power-Aware Routing Protocols in Ad Hoc Networks

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ABSTRACT

Ad hoc wireless networks are flexible networks that can be set up at any time without fixed infrastructure. In ad hoc network, no dedicated router is required because every node can forward the packets it receives to other nodes. Because of mobility, most of wireless devices deployed in ad hoc network rely on batteries for operation. In ad hoc network, because every node plays the role of router, the network is likely to be partitioned in case some nodes run out of their energy quickly. In current related studies, some proposed the means to control the transmission power to save the power, and some others proposed the routing protocols according to current battery power to maximum the total network lifetime. In this thesis, we implemented the lifetime prediction routing (LPR) protocol with AODV to evaluate its performance and also propose an improved protocol, named LPR-plus, to prolong the lifetime of the mobile ad hoc wireless networks in this study. From the simulation results, LPR-plus can prolong the total network lifetime efficiently compared to LPR.

Keywords : ad hoc network, routing protocol, power-aware

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