Comparative Performance Analysis of MBQA-OLSRv2 and MBMA-OLSRv2 Routing Protocols in MANETs

Waheb A. Jabbar 1,2,* , Mahamod Ismail 3, and Roshahliza M. Ramli 1

1 Faculty of Electrical & Electronic Engineering Technology, Universiti Malaysia Pahang, 26600 Pekan, Pahang, Malaysia
2 IBM Centre of Excellence, University Malaysia Pahang, 26300, Gambang, Pahang, Malaysia
3 Dept. of Electrical, Electronic and Systems Engineering, Universiti Kebangsaan Malaysia, 43600 Bangi, Selangor, Malaysia
Email: * waheb@ieee.org

Abstract:
The mobility of node is the key feature of Mobile Ad hoc NETworks (MANETs) and it is a critical issue in data routing. In addition, energy consumption represents another constraint for routing in MANETs due to the limited energy resources. Thus, routing protocol in MANETs must include techniques to overcome issues caused by nodes mobility which unpredictably varies the topology of network. In this paper, we conduct a comparative performance analysis of our routing schemes, namely: multipath battery and mobility aware routing scheme (MBMA-OLSRv2) and multipath battery and queue aware routing scheme (MBQA-OLSRv2) under a series of mobility-based simulations taking into account several Quality of Service (QoS) and energy-related metrics using EXata Network Simulator. The obtained results show that the MBMA-OLSRv2 scheme achieved better performance compared to MBQA-OLSRv2 routing scheme in terms of the considered metrics such as; throughput, end-to-end delay, packets dropped, energy consumption and energy efficiency.

Keywords: MANET; MBQA-OLSRv2; MBMA-OLSRv2; Energy-Awareness; Mobility

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