Abstract

This paper, proposes a new multicast routing protocol for mobile ad hoc networks that handles the congestion to improve the Quality of routing service. Part of the proposed protocol introduced a MAC layer level solution called Group Level Multicasting (GLM) that effectively handles the multicasting at one hop level mesh or tree. The proposed model controls the congestion in hierarchical order to minimize the resource utilization. Limited bandwidth and a high degree of mobility require that routing protocols for ad hoc networks be adaptive, trouble-free, and energy saving. This paper proposed a new Hierarchical Outflow Load-balancing Multicast Routing Protocol (OLMRP) for Ad hoc networks, which handles congestion state. OLMR is capable to adapt a mesh or tree structure with enhanced similar resilience against mobility. OLMRP utilizes GLM to reduce the overhead of route failure recovery, improve route efficiency and reduce data transmissions. The simulation results show that OLMR handles congestion with reduced control overhead in various environments, also the improved packet delivery ratio.
OLMRP: Hierarchical Outflow Load-balancing Multicast Routing Protocol for congestion control in Ad hoc Networks

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- Outay, F.; Ve?que, V.; Boualle?gue, R.; Inst. of Fundamental Electron., Univ. Paris-Sud 11, Orsay, France This paper appears in: 2010 IEEE 29th International Performance Computing and Communications Conference (IPCCC)

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