Abstract

Mobile Ad Hoc Networks (MANETs) are self-configured and are formed by autonomous mobile nodes to exchange various types of data such as video, voice, best effort and background or access different application. Further, MANETs are used by various profiles of users. Hence providing differentiated services becomes mandatory for MANETs. Literature provides various research results on different number of priorities to support differentiated services. In this paper we propose a proportional bandwidth sharing model which supports multiple priorities, takes care of scheduling and MAC layer prioritization (N-MAC). Multiple Priority model is simulated in ns2. Results show that 16% of starvation is reduced in our proposed scheme than the existing
scheme. Proportional bandwidth sharing is verified analytically using Jain's Fairness Index and the waiting times are evaluated using Queuing theory. It is also observed that the overhead of differentiated services increases by 7.5% and overall throughput decreases by 7% with the increase in number of priorities.

References


Index Terms

Computer Science
Information Technology

Keywords
Jain's Fairness Index, Mac Protocol, Manet, Multiple Priorities, Proportional-share