Abstract

The dynamic nature of mobile ad hoc networks (MANETs) is attributed to several gateway selection schemes have been proposed that select gateway nodes based on single QoS metric, for instance link availability, link capacity etc. or Hybrid cluster routing metrics, such as the combination of gateway node speed, residual energy, and number of hops, for mobile ad hoc
networks (MANETs). The nodes build the routing table statically as well as on-demand and therefore they exhibit hybrid nature in routing. The nodes are grouped together called cluster and each group is monitored by a cluster head during data transmission. The routing is performed either by inter-clustering where the source node and destination node belongs to different clusters or by intra-clustering where the source node and destination node belong to same cluster. In this paper, we have introduced a new term called Partial Authority Node (PAN) which shares the load from cluster head and thereby performs intra-cluster routing efficiently. Also a gateway node or a border node (BN) is available for inter-cluster routing to trace the destination easily. So, most of the load is shared by PAN and BN. The algorithm is evaluated using Zone Routing Protocol by making simulations in ns2 and the results shows the performance in terms of throughput, packet delivery ratio, and lowered delay and hence it provides a better quality of service.

Reference

- IEEE Computer Society, “802.11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications”.
Implementation of Zone Routing Protocol for Heterogeneous Hybrid Cluster Routing to Support QoS in Mobile Ad hoc Networks


Index Terms

Computer Science                       Wireless

Key words

QoS Metrics          ad hoc network          gateway selection
end-to-end          end-to-end delay

QoS metrics

end-to-end delay

Energy consumption

heterogeneous cluster

Quality of Service (QoS)

ZRP