

An Enhanced Distributed Weighted Clustering Algorithm for Intra and Inter Cluster Routing in MANET

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Abstract : Mobile Ad hoc Networks (MANET) is defined as collection of routable wireless mobile nodes with no centralized administration and communicate each other using radio signals. Especially MANETs deployed in hostile environments where hackers will try to disturb the secure data transfer and drain the valuable network resources. Since MANET is battery operated network, preserving the network resource is essential one. For resource constrained computation, efficient routing and to increase the network stability, the network is divided into smaller groups called clusters. The clustering architecture consists of Cluster Head(CH), ordinary node and gateway. The CH is responsible for inter and intra cluster routing. CH election is a prominent research area and many more algorithms are developed using many different metrics. The CH with longer life sustains network lifetime, for this purpose Secondary Cluster Head(SCH) also elected and it is more economical. To nominate efficient CH, a Enhanced Distributed Weighted Clustering Algorithm (EDWCA) has been proposed. This approach considers metrics like battery power, degree difference and speed of the node for CH election. The proficiency of proposed one is evaluated and compared with existing algorithm using Network Simulator(NS-2).

Keywords : MANET, EDWCA, clustering, cluster head

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