Abstract

Mobile ad hoc network, abbreviated as MANET, is flexible, self-configuring, wireless ad-hoc network. MANET do not require pre-existing or pre-defined infrastructure, instead it configures and creates a network dynamically. All available nodes (devices) in MANET act as routers and are allowed to move freely in any direction, even in and out of network. Communication in a network with such high levels of nodal mobility is complex and challenging. The paper proposes an efficient weighted cluster election algorithm (WCA) by leveraging most connected, least utilized node for cluster head election. A comparative study of the traditional weighted cluster algorithm (WCA) and the proposed weighted cluster algorithm (WCA) simulation results shown significant improvement in performance, scalability, stability and efficiency of the network.

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**Index Terms**

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**Keywords**

Mobile ad hoc networks Clustering Throughput Packet delivery ratio End to End delay.