

Abstract

In Mobile Ad hoc NETWORK(MANET), leader election is required to perform and initiate a coordinating task, to enable efficient routing and energy management, generating a token. Many constraints exist in MANET relating to transmission bandwidth, battery power and CPU time and the requirement to cope with the frequent topological changes resulting from the mobility of the nodes. This makes leader election in MANET a challenging task. The dynamic topology, limited capability of mobile node and also limited link bandwidth of MANET also pose scalability problem. The scalability issue of MANET is addressed through a hierarchical approach that partitions the mobile devices into clusters wherein a leader node is assign to each cluster. Leader node/Clusterhead has important responsibility for many functions such as cluster maintenance, routing table updates, and the discovery of new routes. Each cooperating nodes must trust each other. This functionality necessitates the election of a trusted node as a leader to carry out the assign task efficiently. The project report here presents a trust based leader election in MANET in which leader node is elected on the basis of trust metrics. Higher trust metrics allows a node to get better chance for leader node selection. The proposed algorithm also helps in effectively managing network's resource, allows less clusterhead changes to adapt dynamic topology. Leader node selection takes into consideration the speed, connectivity, energy and packet dropping of the nodes. Simulation was carried out in Network Simulator (NS2.35) environment.

Keywords: MANET, Leader Node, Clusterhead, Trust, weight.