Abstract

Connected Dominating Sets (CDS) are very useful in improving the routing for Mobile Ad Hoc
Networks (MANETs). A CDS will act as a virtual backbone for communication in the ad hoc networks. Due to the importance of the CDS in routing, formation and selection of the CDS will have significant impact on routing and performance of the network. In the literature number of metrics was proposed to select and form a CDS in a network. In this paper, we studied and analyzed algorithms to construct CDS based on different metrics. The algorithms examined include Minimum Velocity-based CDS (MinV-CDS), Maximum Density CDS (MaxD-CDS), Node ID-based CDS (ID-CDS), Node Stability Index-based (NSI-CDS) and Strong-Neighborhood based CDS (SN-CDS). The performance metrics for the CDS are its Node size, Edge size, Lifetime, Hop count per path, Diameter and Energy index.

References

- R. Fonseca, S. Ratnasamy, J. Zhao, C. Ee, D. Culler, S. Shenker, and I. Stoica, Beacon vector routing: Scalable point-to-point routing in wireless sensornets, in In
Enhancing the Performance of Routing in Mobile Ad Hoc Networks using Connected Dominating Sets

NSDI, 2005.
Enhancing the Performance of Routing in Mobile Ad Hoc Networks using Connected Dominating Sets

- N. Meghanathan, &quot;A Node Stability Index-based Connected Dominating Set Algorithm for Mobile Ad hoc Networks,&quot; The 3rd International Conference on Wireless & Mobile Networks, LNICST 84, p253-262, January 2012.
- N. Meghanathan, &quot;An Algorithm to Determine the Sequence of Stable Connected Dominating Sets in Mobile Ad hoc Networks,&quot; Proceedings of the 2nd Advanced International Conference on Telecommunications, Guadeloupe, French Caribbean, February 2006.

Index Terms

Computer Science
Information Technology

Keywords
Connected Dominating Sets  Mobile Ad Hoc Networks  Routing  Stability  Density
Strong Neighborhood