

{tag}

{/tag}

International Journal of Computer Applications
© 2015 by IJCA Journal

Volume 117 - Number 19

Year of Publication: 2015

Authors:

Vaishali Chourey

Paridhi Kala

10.5120/20661-3353

{bibtex}pxc3903353.bib{/bibtex}

Abstract

The mobile ad hoc network is self-configurable network technology where not any fixed infrastructure is available. Due to frequent mobility and dynamic topology the network suffers from the frequent path breaks and the connectivity issues. The clustering techniques are utilized to improve the connectivity and scalability of network. Therefore a new weight based clustering algorithm is developed using the remain energy, signal to noise ratio, mobility and connectivity for better performance in a cluster. The implementation and the comparative performance study are performed in network simulator 2 platforms. The performance studies of the technique are given in terms of packet delivery ratio, remaining energy, end to end delay, throughput and overhead in network. The obtained results demonstrate the proposed technique improves the reliability of cluster.

Refer

ences

- Feng Jiang, LanlanRui, Yaoyong Guo, Xuesong Qiu, Wei Li, "Reliability-Oriented Clustering Algorithm for Service Search in Ubiquitous Stub Environments", Copyright IEICE - Asia-Pacific Network Operation and Management Symposium (APNOMS) 2014

- Wojciech Bednarczyk, Piotr Gajewski, "An Enhanced Algorithm for MANET Clustering Based on Weighted Parameters", Universal Journal of Communications and Network 1(3): 88-94, 2013
- Dr. Mohammad U. Bokhari, Hatem S. A. Hamatta, Shams Tabrez Siddigui, "A Review of Clustering Algorithms as Applied in MANETs", International Journal of Advanced Research in Computer Science and Software Engineering, Volume 2, Issue 11, November 2012
- Naveen Chauhan, Lalit Kumar Awasthi, Narottam Chand, Vivek Katiyar, Ankit Chugh, "A Distributed Weighted Cluster Based Routing Protocol for MANETs", Wireless Sensor Network, 2011, 3, 54-60
- Syed Zahidi, Fadi Aloul, Assim Sagahyoon, Wassim El-Hajj, "Using SAT & ILP Techniques To Solve Enhanced ILP Formulations Of The Clustering Problem In MANETS", 978-1-4577-1379-8/12/\$26.00 ©2012 IEEE
- Shilpa Bade, Meeta Kumar, Pooja Kamat, "A Reactive Energy-Alert Algorithm for MANET and Its Impact on Node Energy Consumption", International Journal of Computer Applications (0975 – 8887) Volume 71– No. 18, June 2013
- Soumyabrata Talapatra, Alak Roy, "Mobility Based Cluster Head Selection Algorithm for Mobile Ad-Hoc Network", I. J. Computer Network and Information Security, 2014, 7, 42-49 Published Online June 2014 in MECS
- Perna Malhotra, Ajay Dureja, "A Survey of Weight-Based Clustering Algorithms in MANET", IOSR Journal of Computer Engineering (IOSR-JCE) e-ISSN: 2278-0661, p-ISSN: 2278-8727 Volume 9, Issue 6 (Mar. - Apr. 2013), PP 34-40
- Hui Cheng, Shengxiang Yang, Jiannong Cao, "Dynamic genetic algorithms for the dynamic load balanced clustering problem in mobile ad hoc networks", Expert Systems with Applications 40 (2013) 1381–1392, 2012 Elsevier Ltd. All rights reserved.
- S. A. Ade & P. A. Tijare, "Performance Comparison of AODV, DSDV, OLSR and DSR Routing Protocols in Mobile Ad Hoc Networks", International Journal of Information Technology and Knowledge Management, July-Dec 2010, Volume 2, No. 2, pp. 545-548
- Vinay Sridhara, Nagendra Subramanya, "Evaluating Different Techniques to Improve TCP Performance over Wireless Ad Hoc Networks", <http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.80.8842>
- M. S. karthikeyan, K. Angayarkanni, and Dr. S. Sujatha, "Throughput Enhancement in Scalable MANETs using Proactive and Reactive Routing Protocols", proceedings of the international multi conference of engineering and computer scientists, Vol II, march 2010
- J. Broch, D. A. Maltz, D. B. Johnson, Y. C. Hu and J. Jetcheva, "A Performance Comparison of Multi-hop Wireless Ad-hoc Network Routing Protocols", Proceedings of the 4th Annual ACM/IEEE International Conference on Mobile Computing and Networking, PP. 85-97, ACM Press, 1998.
- A. Boukerche, "Performance Comparison and Analysis of Ad-hoc Network Routing Algorithms", IEEE Conference on Performance, Computing and Communication, PP. 171-178, April 2001.
- Aniket Mathuriya, Pushpraj Pal and Love deep Grower, "Stability Aware Routing in Mobile Ad-Hoc Networks using Multiple Route", International Journal of Computers & Technology, ISSN: 2277–3061, On line Volume 2 No. 3, June, 2012.
- G. Ivascu, S. Pierre, A. Quintero, "QoS Support Based on a Mobile Routing

Backbone for Ad-hoc Wireless Networks"; Proceedings of the International journal Conference on Wireless Communications and Mobile Computing, IWCMC'06, PP. 121-126, Vancouver, Canada, July 2006.

- A. Iwata, C. Chiang, G. Pei, M. Gerla, and T. Chen, "Routing Strategies for Ad-hoc Wireless Networks"; IEEE Conference on Selected Areas in Communications, Vol. 17, No. 8, PP. 1369-1379, Japan, August 1999.

- P. Johnson, T. Larson, N. Headman, B. Mielczarek and M. Degmark, "Scenario Based Performance Analysis of Routing Protocols for Mobile Ad-hoc Networks"; Mobicom'99, PP. 195-206, 1999.

- D. Chakeres and E. B. Royer "The Utility of Hello Message for Determining Link Connectivity"; Proceedings of 5th International Conference on Wireless Personal Multimedia Communications (WPMC) Vol. 2 , PP. 504-508, Hawaii, 2002.

- P. S. Hiremath, Anuradha T. , "Performance Comparison of Cluster based and Threshold based Algorithms for Detection and Prevention of Cooperative Black Hole Attack in MANETs"; Int. J. Advanced Networking and Applications Volume: 6 Issue: 3 Pages: 2352-2358 (2014) ISSN : 0975-0290

Computer Science

Index Terms

Networks

Keywords

MANETs Clustering Cluster head packet delivery ratio