An Enhanced Dynamic Probabilistic Based Broadcasting Scheme for MANET

J. K. Keerthana, I. Kala, M. Mahadev, S. Mehamoodha Nousheen, A. Pavithra

Department of Computer Science and Engineering, SNS College of Technology, Coimbatore, Tamil Nadu, India
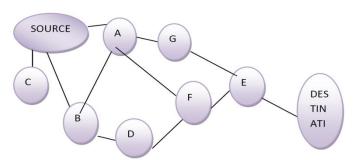
ABSTRACT

Mobile Ad Hoc Network (MANET) which is known as a temporal infrastructure less network. This type of network is formed by combining some set of wireless mobile nodes which is inter-connected with hops. The mobile node connected to the destination node causes some route failure due to the route overhead and due to some minimum stability link to those nodes. Thus to overcome the situation, the probability function is calculated to the each node which is nearest to the source node known as neighbor nodes. The efficiency is increased while comparing to the nodes using the probability function and selecting the path. The valid new route is discovered and suggested a new path by considering the probability range of neighbor nodes. The authentication is also provided for secured data transmission. The packet delivery ratio is improved, reduces the routing overhead, and reduces the route failure.

Keywords : MANET, Broadcasting, PF, DPF, EE, LLT, MINLP, PLR, PCH, UB, AODV

I. INTRODUCTION

The clusters of nodes are connected with intermediate hops for transmission. MANET consists of basic characteristic with dynamic topology. Due to the behavior it can change frequently and can cause node failure. Thus it can lead to a failure of valid route. The new valid route is identified by selecting the efficient path and longer lifetime of the route is maintained. The routing protocol is suggested to find the valid path with efficient node transfer by improving the performance of route and reduce the routing overhead. The path is suggested by calculating the range of efficiency and transferred the message to the destination. The nodes are forwarded by calculating the efficiency through the probability function (PF), which depends on the density of the local neighbor and the broadcast coverage with it. The existing system is suggested with minimum stability by calculating probably. But the proposed is with Calculating the probability by using Dynamic Probability Function (DPF) with maximum stability of link and improved performance efficiency without any node failure with authentication is provided.

II. METHODS AND MATERIAL

Figure 1. Connection of Node from Source to Destination Using Neghbor Nodes

Overview of Routing Protocols

Routing protocol consists of a set of rules which is used to govern the message packets from source to the respective destination. Thus it contains different types of classification of routing protocols.
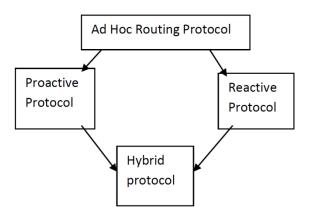
Figure 2. Classification of Routing Protocols

Literature Survey

Kannan Shanmugam [1]-In this paper, the process of finding valid route leads to notable drop in the throughput of the network. To suggest a new valid path to the targeted mobile node and the available proactive routing protocols use simple broadcasting method known as simple flooding. The basic algorithms contain some complexity in route maintenance. Thus, by considering routing complexity with the goal of increasing throughput of network. From this paper, they have introduced a new approach is known as Dynamic Probabilistic Route (DPR) discovery. The considered Node's Forwarding Probability (FP) is dynamically calculated by the DPR mobile nodes using the Probability Function (PF) which depends on density of nearest local neighbor nodes and the cumulative number of those nodes broadcast of covered neighbors. Here, the parameters used in the system like network density and impact of load for assessing the performance of the planned routing approach. In DPR, the packets are forwarded to the neighboring node with dynamically computed probability to connect the nodes which is known as forwarding probability (FP). The probability function is calculated when the route is suggested at the first time. According to the routing table the routes are updated, the paths are suggested after the probability is calculated.

S. Priyadharshini [2]- Mobile Ad Hoc Network consists of mobile nodes and due to its mobility they loss stable path it causes the increase in battery power and loss of data, link or route. The critical issue is to select stable path with longer life time. Here, the path failure occurs while selecting longer life time path since it is mobility and the power drain occurs. Due to path

failure , it causes frequent route discovery which affects the performance of the routing protocol. The author proposed the stable path with longer life time usage of the path with the stability based protocol. It reduces the routing overhead and improves the packet delivery. This proposed protocol consider the lifetime of the route as a metric for the route discovery process. The route contains multiple link to connect the destination if any link break down then link failure occurs, its life time is considered as minimum lifetime of all the link nodes. Every link is formed by two adjacent nodes, which have limited battery and can roam freely and it is broken if any of the two nodes are not alive due to exhaustion of energy or any two nodes are in out of transmission range. The Link Life Time (LLT) is used which includes both the node life time and connection life time. It reduces the routing overhead, route failure and improve the packet delivery ratio.

J. Padman [3]- The design based protocol is used for effective transmission of messages in periodic manner with reduced overhead. The Proactive routing protocol based routing under which is related to the design based specification of the system where there is an implementation of comparison with respect to the protocol of the reactive routing plays a crucial role in its implementation based aspects, followed by the design based specification in a well effective manner under which there is a relative phenomena and the probability of the reduction of the overhead is a major concern respectively. The nodes are connected with various links to the neighbor node and the data packet is transferred efficiently. The problem based on the broadcasting the node range, the design based protocol is used for forwarding the node with the required range of transmission in an effective manner.

Wein-Kuang kuo [4] - In this paper, it describes about tremendous amount of traffic demands for ubiquitous access and emerging multimedia applications significantly increases the energy consumption of battery-powered mobile devices. This considered that the traffic due to node travel cause the decrease in the performance and it reduces the efficiency. Due to such problem Energy Efficiency (EE) optimization is suggested in this paper. MANET becomes greatest part to increase the efficiency by using the cross-layered design paradigm and measured according to it by bits

per joule. The problem is identified and modeled as a non-convex Mixed Integer Nonlinear Programming (MINLP) formulation for considering the efficiency for routing, traffic scheduling, and power control towards it. The MINLP problem of NP-hard is very general, thus non-convex is suggested to perform. The MANET provides high frequency of video, audio transformation, due to such frequency usage the battery limits, traffic in ubiquitous access demands. To overcome, the algorithm used to follow a valid route without traffic and with reduced battery usage by suggesting the Branch and Bound (BB) algorithm. The algorithm contains several components to solve a problem of optimization efficiency using framework. The framework provides flexibility with some key components and design the customized algorithm based on the problem structure and its properties. It is a problem efficiency algorithm which branch each problem and bound towards it and fix the solution to it by optimization. In this algorithm they approximated the piecewise linear relaxation (PLR) and log functions with piecewise convex hulls (PCH) to build a MILFP model with tight Upper Bound (UB) problem. The formulations are used for efficient transformation and performance for each problem using EE optimization.

J. A. D. C. Anuradha Jayakody [5] - The security authentication is performed while transformation. In nature of the transformation medium the broadcast, Wireless sensor networks are vulnerable to security attacks. The performance is decreased while transformation due to security attacks. In many of the application, data obtained from the sensing nodes which need a false, or malicious node could intercept the information or send false message to the corresponding sender. Among major attacks performed like eavesdropping, spoof Attack, Denial of Services, Wormhole attack, Sinkhole attack, Sybil attack, Passive information gathering, Node capturing, and false or malicious node, Hello flood attack are common. The author have proposed and implemented an efficient lightweight authentication with the secure routing protocol like AODV is suggested to perform. Thus it increases the routing protocol efficiency and increases the network security using MANET. The lightweight authentication algorithm is suggested for secured path with data is transmission. After deciding the Routing protocol to perform the author proposed the authentication algorithm on top of AODV to secure the routing process. Thus the implementation is done with the NS2 Simulator. It results to obtain and consider the Packet Delivery Ratio, End-to-End Delay and increased Throughput for new solutions obtained. Thus in the wireless network the authentication with the AODV routing protocol is used for effective transmission of data and increase the performance in MANET.

III. CONCLUSION

Thus from the papers they mainly deal with the efficiency and performance of the path maintenance and data transmission. While the node is travelling, various problems occurred like [4] the traffic and power which is reduced by using energy efficiency (EE) with BB algorithm is solved, the standard connection where [2]the stability of the link is provided in maximum level to enhance the connection between the nodes and [5] the authentication is required for increasing the efficiency in data transmission. Thus the lifetime of the nodes is maintained and improved from the above discussion. [1]The forwarding probability is maintained by routing table and the valid path is suggested by using the protocols. The probability is mainly used to increase the throughput. And [3] the packet delivery ratio is improved, similarly by using the probability rebroadcasting the route failure is also decreased. Therefore the overhead is also reduced by optimizing the problem and solved, while improving the path discovery and lifetime [2] of nodes the stability increases and also increases the performance of each node.

IV. REFERENCES

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