

Battery Power Aware LAR Protocol for Mobile Ad-Hoc Network

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Abstract – Location-Aided Routing (LAR) is an on demand routing protocol that minimize the conjunction and overhead of route discovery by utilizing location information of mobile nodes obtained using Global Positioning System (GPS). Along with that consumption of battery power by any node over network is also an important issue. Larger consumption degraded the lifetime of network. LAR protocol has very large requested zone and it still flood over large area of network which leads to unwanted wastage of network resource. Proposed Power aware Location aided routing protocol use to select high energy node on selected path by AODV protocol to minimize retransmission due to packet drop because of discharging of selected node with in the path.

Keywords – LAR, GPS, AODV, Ad-Hoc.

I. INTRODUCTION

The network consists of mobile ad hoc wireless soldiers who were often transmitted. A soldier leads to a change in the movement of the roads, which require the existence of a mechanism to identify new ways. It has already been several routing protocols for ad hoc networks suggested. This article proposes an approach to take advantage of location information (for example, obtained using the global positioning system) to improve the performance of routing protocols for ad hoc networks. Using the location information, the site with the help of the proposed directive (LAR) protocols limit the search for a new way to smaller dedicated network zone "on demand". This leads to a significant reduction in the number of routing messages. We propose two algorithms to determine the area of application, and also indicate potential improvements to our algorithms.

The Leading an important aspect in mobile ad hoc network protocols that find a way to be followed by the data packets from the source node to the destination routing node. One of the main challenges Routing Protocol designed for ad hoc wireless networks is facing resource constraints. The devices used in wireless networks allocated in most cases require portability, and therefore they also have the size and weight restrictions with restrictions on the power source. Increase the battery power has made a huge phone and fewer contracts. Energy efficiency remains one of the major networks such design considerations. So you have to balance the optimization of ad hoc network routing protocol such contradictory aspects. In the existing guidelines on the block, it was a vital network organization into sections called groups to maintain a relatively stable effective topology. Membership in each group change over time in response to node mobility, and the failure of the node or access to a new node. With the help of a routing protocol site (LAR) [12] uses the location of the routing information. However, LAR assumes the availability of the global

positioning system (GPS) to the geographic location of necessary routing information. And all involved a decade with his position, which consumes a lot of energy into account. Also during the routing process, the number of hops is relatively higher than guidance on the block basis. Higher charges hop, more energy consumption to guide the packet from the source to the destination. These problems have led us to propose a protocol to improve the performance of LAR in the field of energy efficiency.

Site of the steering (LAR) is a mechanism that seeks to reduce the dedicated control supervision message based on distance vector of demand (AODV) routing protocol flooding only a part of

The network that is likely to have on the road to the destination. LAR benefit from the global positioning system (GPS) to determine a possible site for the coordinates of the destination node. Based on this information, you know LAR part of a network which will be subject to limited flood, thereby reducing the total number of control package travel through the road network during the discovery process. GeoAODV is a variant of AODV protocol such as LAR, which also works to limit the search area used for the discovery process coordinate the road. However, unlike LAR GeoAODV is not the assumption that each network node knows the travel speed and location of the corresponding destination node. Instead, try to understand GeoAODV a vital site distribution between nodes in the network information.

Traditional routing protocols have become unfit for the network against intruders when the contract is very mobile due to overloading keep updated topology information network. Geographic Routing Protocols best measure of ad hoc networks, mainly for two reasons: there is no need to keep the Directive updated tables and it is necessary to have a global view of the network topology and its changes. Therefore, the geographical routing protocols attracted much attention in the field of spam robots network routing protocols. This geographic program allows routers to be virtually stateless because of navigational decisions based on the location information

on the one hand, and the location information of all neighboring states and hop. Also not necessary, therefore, the establishment and maintenance of roads, significantly reducing overhead costs. [8]

LAR is optimized for reaction protocols to reduce the flooding overhead. LAR is used in recognition of the point of place to reduce the small area flood (called seeking re) relative to the whole network area zone. LAR is assumed that each node knows its own situation, but do not use special service site for other nodes instead. The use of information obtained from the point of discovery on the prior estimate Road site to the destination site to limit the flood zone in the later discovery of the road. It was proposed two different planes with different reasoning lar to choose the application area. [9]

In LAR1, the sending node only route the message within the region was not asked to address the neighbors outside the penalty area. In a limited area, are used to floods. In LAR2, always direct the node sends a message to all nodes closer to the same destination [1].

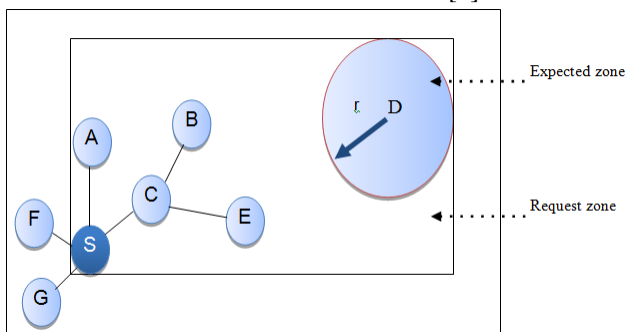


Fig.1. Show Location Aided Routing

It was the site development of energy efficiency using routing protocols (EELAR) based on the location using orientation (LAR). EELAR allows a significant reduction in energy consumption of batteries of mobile nodes by reducing the area of the discovery of a new road to a small area. Thus, the head control packet is reduced dramatically. In EELAR and uses without a base station wireless signal, divided circular area network concentrated in the base station in six equal semi-regions. With the discovery of the road, instead of dumping of packet control the entire network area, and embedded sub-region only of the mobile node destination. Mobile base store locations in the contract table position the station. Simulation results using NS-2 [16] showed that the protocol allows EELAR improvement in public expenditure control box and the birth rate compared to AODV, LAR, and DSR protocols.

II. ISSUES OF LOCATION AIDED ROUTING

In this section there is a discussion about position-based routing for mobile ad hoc networks. There is an outline of main problems that have to be solved for this class of routing protocols and present the solutions currently available.

III. BASIC PRINCIPLES AND PROBLEMS

Ahead of the pack can be sent, it is necessary to determine the position and the destination. Typically, a site service is responsible for this task. And it can be classified list site services based on the number of contract to host the service. This might be a little specific contract or all nodes in the network. In addition, each server site which retains the position of some or all nodes in the network. We are four groups for some short cuts in exchange for some, and some for all, all for some, and throughout the discussion of location services.

In the orientation based on the position and the decision of a referral by a node based primarily on the development of immediate destination packages neighboring node and the position of hop one. See the target position in the packet header. If you get a node to see more accurate position on the one hand, he may choose to update the situation in the packet before transmitting it. Neighbors attitude and knowledge normally through the dissemination of a hop. These tags are sent periodically by all nodes and contain the situation from the sending node. And we can distinguish three main beam redirect to based on the steering position: Executive greed, and limit floods strategies trend, and the hierarchical approach.

For the first two, re-package given to one node (greed Forward) or more (directional restricted floods) neighbors hop and located closer to the point of leading the node itself. neighbor selection in the case of greed on the criteria of the optimization algorithm. We will give the various strategies using existing algorithms to make that choice.

It is quite clear that the two shipping strategies can fail if there is not a hop neighbor and this is as close to the point of leading the node itself. And discuss recovery strategies that also address this kind of failure in the part later. The third strategy is to redirect to form a hierarchy to increase a number of mobile contract. In this article, we study two representatives of hierarchical routing that are used to guide the path of greedy and extended approach is based positioning to guide the region. Location block shipping service strategy and two construction works needed to guide function of position, and the criteria for classifying different approaches.

IV. PROBLEM DEFINITION

Efficiency of Route hunting in mobile ad-hoc network is depending upon blind flooding of route request packets in network. Blind flooding of route request packets lead to increase redundancy over the networks. These data redundancy over the network unnecessarily increase conjunction and traffic over the network. Location-Aided Routing (LAR) is an on demand routing protocol in which Location information is used to identify request zone and

expected zone and concentrate only over Request zone for route discovery. LAR protocol minimizes the conjunction and overhead of route discovery by utilizing location information of mobile nodes obtained using Global Positioning System (GPS).

In MANET along with traffic and conjunction control, battery power is also very important issue in MANET for longer survival of network. There is not any centralized power controller for mobile node in MANET. By any means if the node has lost their energy then it is not practical to replace all battery over the network.

One possible approach is to utilized battery power of node efficiently. The meaning of efficient use of battery power is to check battery power of node before participating in route discovery in order to reduce redundancy over the network. Along with that LAR protocol have very large requested zone and still flood over large area of network which leads to unwanted wastage of network resource.

V. PROPOSED SOLUTION

Proposed Power aware Location aided routing protocol use to select high energy node on selected path by AODV protocol to minimize retransmission due to packet drop because of discharging of selected node with in the path.

In LAR (Location aided routing) destination node share their GPS location information with source node and source node buildup requested and expected zone.

Along with that proposed scheme categorize node on the basis of remaining battery power and provide two different level ie lower battery power (Less than P/4), and full battery (between P to P/4) .

VI. CONCLUSION

Location-Aided Routing (LAR) protocol minimizes the conjunction and overhead of route discovery by utilizing location information of mobile nodes obtained using Global Positioning System (GPS).But it increase consumption of battery power by any node over network and degraded the lifetime of network. In this dissertation power aware location aided routing protocol has been proposed. Proposed Power aware Location aided routing protocol (PA-LAR) use to select high energy node on selected path by AODV protocol to minimize retransmission due to packet drop because of discharging of selected node with in the path.

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