ENHANCE THE GREEDY ROUTING PROTOCOL TO REDUCE THE TIME FOR PACKET TRANSMISSION IN MANET

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Abstract— **These nodes or devices can communicate with other nodes directly within or outside their transmission range .The proposed rolling-ball UDG boundary traversal is employed to completely guarantee the delivery of packets from the source to the destination node under the UDG network. The boundary map and the indirect map searching scheme are proposed as efficient algorithms for the realization of the RUT technique. The hop count reduction scheme is utilized as a short-cutting technique to reduce the routing hops by listening to the neighbour's traffic, while the intersection navigation mechanism is proposed to obtain the best rolling direction for boundary traversal with the adoption of shortest path criterion. In previous research on mobile ad-hoc network indicated to use of GAR-Protocol algorithm because it simplifies routing and can improve the performance of flexibility and scalability in the network. In this proposed work, enhanced the greedy routing protocol through reducing the time during the packet transmission in MANET.**

Index Terms— unit disk graph, hop count reduction, indirect map searching, Greedy anti void routing protocol, Mobile ad hoc network, localized algorithms.

I. INTRODUCTION

With the development of the next generation of wireless communication systems, development in personal computing devices and the widespread use of mobile and handheld devices has resulted in an increasing popularity of mobile ad hoc networks (MANET). In simply stating, a Mobile Ad Hoc Network (MANET) is a mobile, multi-hop wireless network, which does not need pre-existing infrastructure or centralized administration. If the mobile nodes are high dynamic i.e. it is connected and disconnected to and from clusters that leads to the stability of the network reduced and reconfiguration of cluster heads is unavoidable. The current research work still cannot fully deal with the void problem since the excessive control overheads should be consumed so as to guarantee the delivery of packets. In this paper the solution to the void problem is taken up as the issue. Wireless sensor networks consist of a large number of inexpensive sensor nodes distributed in environment uniformly, having limited energy, therefore, in the most cases, nodes communicate with central node via their neighbors. On the other hand, an optimal route must be selected because there are different routes to central node from any other nodes. A good GAR-Protocol structure should preserve its structure as much as possible when nodes are moving and/or the topology is slowly changing. Otherwise, re-computation of cluster heads and frequent information exchange among the participating nodes will result in high computation overhead every node in the network is serving as a router, which means that every node is able to forward data to other node. Dynamic routing is the most important issue in MANET's. In flat structure exclusively based on proactive and reactive routing algorithms cannot perform well in a large dynamic MANET. That means, with the increase in size of the networks, flat routing schemes do not scale well in terms of performance.
Procedure for Paper Submission

II PROPOSED WORK

In this Research paper, a greedy anti-void routing (GAR) protocol is proposed to solve the void problem with increased routing efficiency by exploiting the boundary finding technique for the unit disk graph (UDG). The proposed rolling-ball UDG boundary traversal (RUT) is employed to completely guarantee the delivery of packets from the source to the destination node under the UDG network. The boundary map (BM) and the indirect map searching (IMS) scheme are proposed as efficient algorithms for the realization of the RUT technique.

A. Data monitoring and mining

MANETS can be used for facilitating the collection of sensor data for data mining for a variety of

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applications such as air pollution monitoring and different types of architectures can be used for such applications. It should be noted that a key characteristic of such applications is that nearby sensor nodes monitoring an environmental feature typically register similar values. This kind of data redundancy due to the spatial correlation between sensor observations inspires the techniques for in-network data aggregation and mining. By measuring the spatial correlation between data sampled by different sensors, a wide class of specialized algorithms can be developed to develop more efficient spatial data mining algorithms as well as more efficient routing strategies. Also researchers have developed performance models for MANET by applying queuing theory.

B. Parameters

In our simulation experiments, N was varied between 30 and the transmission range was varied between 0 and the nodes are moved randomly according in all possible directions distributed uniformly between 0 and of the coordinates. This behaviour simulation. We assumed which can handle (i.e. cluster size) the importance of keeping the node degree possible and to satisfy load balancing stability of the topology high in equation 1. Distance (dv-delta); , where delta is a threshold for the cluster's size(connection); if (dv ==0) then Dv = max_distance ; end; end;Mv, asYt) and (Xt−1, Yt−1) are the coordinates of the node v at time combined weight Wv for each node v,

Wv=w1*delta_v+w2*Dv+w3*Mv+w4*Pv,

and w4 are the weighing factors and w1+w2+w3+w4=1 Wv as the cluster head. All the neighbours of the participate in the election procedure f only.

C. Lowest-ID Algorithm

In this algorithm was originally proposed by [11, 13] each node is assigned a distinct ID and the clusters are formed following the steps given below:

1) Periodically a node broadcasts the list of nodes that it can hear (including itself).
2) A node, which only hears nodes with ID higher than itself, becomes a Cluster head (CH).
3) The lowest-ID node that a node hears is its cluster head, unless the lowest-ID specifically gives up its role as a cluster head.
4) A node, which can hear two or more cluster heads, is a Gateway.
5) Otherwise the node is an ordinary node. Major drawbacks of this algorithm are its bias towards nodes with smaller ids which may lead to the battery drainage of certain nodes, and it does not attempt to balance the load uniformly across all the nodes.

D. Highest-Degree Algorithm

The Highest-Degree Algorithm, also known as connectivity-based GAR-Protocol algorithm, was originally proposed by Gerla and Parekh [12, 14], in which the degree of a node is computed based on its distance from others. A node x is considered to be a neighbor of another node y if x lies within the transmission range of y. The node with maximum number of neighbors (i.e., maximum degree) is chosen as a cluster head. The neighbors of a cluster head become members of that cluster and can no longer participate in the election process. Any two nodes in a cluster are at most two-hops away since the cluster head is directly linked to each of its neighbors in the cluster. Basically, each node either becomes a cluster head or remains an ordinary node (neighbour of a cluster head). Major drawbacks of this algorithm are the number of nodes in a cluster is increased, the throughput drops and hence a gradual degradation in the system performance is observed, and another limitation is the re-affiliation counts of nodes are high due to node movements and as a result, the highest degree node (the current cluster head) may not be re-elected to be a cluster head even if it loses one neighbor. All these drawbacks occur because this approach does not have any restriction on the upper bound on the number of nodes in a cluster.

E. Route Discovery

Step 1: Whenever data packets are needs to be forward by the source node to the destination, the RREQ packets are flooded to entire network. Since RREQ is flooded network-wide, a node may receive several copies of the same RREQ. These duplicate copies can be gainfully used to form alternate reverse path.

Step 2: The reverse paths are formed only using those copies that preserve loop freedom (never form a route at a downstream node via upstream node) and disjointness (ensure the last hops and the next hops before destination are unique) among the resulting set paths to the source.

Step 3: If route information to the destination is present in the route cache of intermediate node, it has no permission to send Route Reply (RREP) back to the source, permission is given only to the destination node.

Step 4: The destination upon receiving all RREQ packets attaches route code and sent it as RREP packet. Upon reception of RREP packets the source selects the primary route on the basis higher bandwidth.

F. GAR-Protocol Algorithm

Step1: The algorithm begins by assigning tracks to left.

Step2: The greedy routers are about to examine makes one pass over the channel the left to the right.

Step3: Contact the nearby nodes.

Step4: If path fail means dynamically search for another available node (By PUC Mechanism).
Step5: The algorithm next locates new link (i.e. choosing another path).
Step6: Reaching Destination.

CONCLUSION

In this Research paper, a UDG-based GAR protocol is proposed to resolve the void problem incurred by the conventional GF algorithm using in MANET. The RUT scheme is adopted within the GAR protocol to solve the boundary finding problem in MANET to GAR protocol, which results in guaranteed delivery of data packets under the UDG networks. The Boundary map and the IMS are also proposed to conquer the computational problem of the rolling mechanism in the RUT scheme, forming the direct mappings between the input/output nodes. The proposed GAR algorithms can guarantee the delivery of data packets under the UDG network.

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