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The FTHMRP protocol for Multicasting in Mobile Adhoc Networks- A Review

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ABSTARCT: In mobile adhoc network multicasting is identified as one of the major area of research. FTHMRP is multicasting protocol which basically resolves the problem of initially conventional flat multicasting protocol. Conventional flat multicasting protocol does not scale well to network size and are not suitable for tam multicasting in large scale mobile adhoc network. To overcome these all problems like large membership as well as network size and fault tolerance to link failures, one protocol introduced called FTHMRP. The FTHMRP protocol, which uses the hierarchal routing in hyper cubic architecture for multicasting tree generation. The outcome of proposed algorithm of FTHMRP is very good in term of fault tolerance. This protocol can solve the problem of link failure and fault tolerances. FTHMRP used the hierarchical routing for multicast tree generation in hyper cubic architecture. But when mobile nodes multicasting the RREQ packet to make path at that time it increase the energy consumption in the network. So using unicast forwarded multi-source multicast routing protocol this problem may be resolved.

Keywords :FTHMRP, multicasting. unicast forwarded multisource multicast**.**

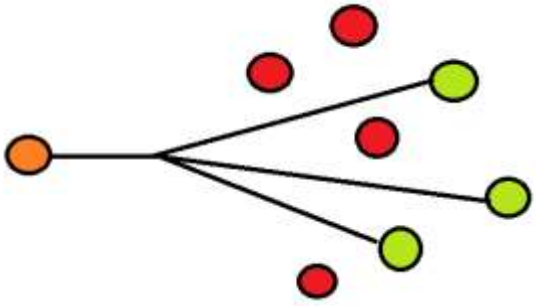
1. Introduction

MANET is a type of wireless network where mobiles nodes or other wireless devices that are connected together to form a network which is independent of any infrastructure. A Mobile Adhoc network is collection of nodes which are randomly connected with each other without any infrastructure and forming random topology. The node in MANET can act as both routers and hosts. The nodes have ability to self-configure them which makes this technology suitable for providing communication. It means there is no base station required in MANET. So the nodes can communicate with other nodes which are in the range of network only. "Flooding "is a technique which used to forward the data from sender to destination. Multicasting means one-to-many, many-to many distribution of data between the nodes in any network.It is type of group communication in which information is sent by some node to group of destination nodes simultaneously.

Two types of protocols in multicasting

1.Tree based multicasting

2. Mesh based multicasting



A tree based multicast protocol is shared multicasting routing tree is used to send or deliver the data from sender to reciver. Many multicast group are there when any node wants to join any multicast group or the node wants to send the data to any node of multicast group , if it doesn't has a route to that group it sends the RREQ message to the group. Only The member of that particular group respond for the join request In mesh based multicast tree, both the sender and receiver nodes are fully connected to multicasting group. To join mesh multicast group

a node firstly checks its neighboring nodes that they are already member of the mesh multicast group or not. If neighboring nodes are member of the group then requesting node announce its request to the neighboring node for the membership.

LITRATURE REVIEW

Ting Lu and Jie Zhu(2013) introduces, Power-aware multicasting is proposed algorithm to reduce the energy consumption .This energy- efficient genetic algorithm mechanism is used to solve QoS the multicasting routing problem which is np complete. Genetic algorithms are not purely adequate for delay sensitive types of applications in the MANET, because the genetic algorithms cause various types of iterations.

Golla Varaprasad, (2013) proposed multicast algorithm which is used for increasing the lifetime of the mobile and any network of mobile adhoc network. Two metrics are considered in this paper: Residual battery capacity of any node and Relay capacity of the node. This proposed models is compared with already existing algorithm for e.g multicast incremental power, lifetime- aware- multicasting tree, multicasting-ad-hoc-on-demand –distance vector. This proposed model results at the end or show the best result which increase the life time of node, lifetime of network and also the throughput.

V.Meena (2013) described position based energy efficient multicast protocol. In this network area is divided into equal number of cells. These cells are hexagonal cells. One cell head is elected for every cell. In this backup of cell head is taken if he contains any multicast member. The proposed algorithm reducing the more energy consume by the nodes because cell head and the forwarding nodes are only based on highest battery capacity. This protocol increases the lifetime of the node in the network. Position aware energy efficient multicast protocol is source tree multicast routing protocol which provide us scalable energy efficient multicasting.

Kalakruntha theja 2013 Initially times conventional flat multicasting protocol were used. In which tree consist a team rather then any number of individual's nodes which are efficient for large network. FTHMRP resolves the problem of initially conventional flat multicasting protocols. They are not scalable well to any network size and are also not suitable for team multicasting in large scalable mobile adhoc network. To resolve these types of problems FTHMRP protocol is used, in which a protocol is develop called hierarchal multicast routing protocol based on hypercube architecture for team multicasting with fault tolerance. This protocol constructs a Hierarchy of team leaders and provides fault tolerant multicasting for those type of data which are sensitive in large scale mobile ad-hoc network. In the hierarchy of this protocol different levels are defined:

Mobile node tier

Hypercube tier level 1

Hypercube tier level 2

PROPOSED METHODOLOGY

FTHMRP is a routing protocol for multicasting and remove the fault from the network. This proposed algorithm solved the problem of fault tolerances and link failure between the nodes in any network. The hierarchal routing approach is used for FTHMRP which use the hyper cubic levels for removing the fault in network. FTHMRP is also useful when any new path is reconstructed with minimum amount of time. But when mobile nodes multicasting the RREQ request to make a path at that time it increase the energy consumption in the network. In FTHMRP various problems like control overhead, packet loss are there. So there is need to improve these problems doing some improvements. Multicasting plays an important role whenever group communications are required. Most of the existing multicast routing protocols in mobile ad hoc networks consider only one source in a multicast group and become inefficient when the protocol is extended to multi-source multicasting. In this work, we propose a **unicast forwarded multi-source multicast routing protocol**, for ad hoc networks which is having more than one source in a group. Here, the sources of the group also act as a receiver for other sources in that group. The proposed routing method is a cluster based one and avoids the flooding or broadcasting of control packets to form routing structure. On executing source joining and receiver joining procedures, a complete path for multicast data transfer was established. As the join request control packets are forwarded only through cluster-heads and junction nodes, lower amount of control overhead is incurred.

CONCLUSION

Mobile computing or devices are evolving very fast range with the inventions of new advance wireless networking protocols. Wireless transmission ,reception ,retransmission of data and various another operations ,all consume some battery. Energy consumption is an important issue in in mobile devices because these devices are operates on very limited battery power. To resolve this energy consumption problem between the nodes various multicasting protocols are defined. FTHMRP fault tolerance multicasting routing protocol s a type of protocol used for energy consumption for resolving the fault between nodes. The FTHMRP protocol will recover the link in small amount of time and due to which the chances of fault are reduced in the network. There will some enhancement in FTHMRP using unicast forwarded multi-source multicast routing protocol to establish path between sender to destination. So the proposed algorithm will try to remove the problem of packet overhead through unicasting.

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Profile

Dheeraj Sharma is student of Lovely Professional University, Jalandhar (INDIA). She has received B.Tech Degree from Malout Institute of Management and Information Technology. Her main research interest includes networking.