Temporary centralized network Using On-Demand Routing Protocol

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Abstract - Applications such as conferences, meetings, lectures, crowd control, search and rescue, disaster recovery, and Army battlefields typically do not have central administration or central infrastructure available.In these situations, ad hoc networks, without any wired base stations. Nodes in such a network move arbitrarily,thus network topology changes frequently and unpredictably. Moreover, bandwidth and power are limited. These constraints, in combination with network topology dynamics make routing in ad hoc networks challenging.

In this paper introduces a wireless temporary network without any fixed infrastructure with centralized node called as by-passer. Design a network all the communication between the nodes through bypasser. Implement some predefined text message related to situation and feed all the nodes involved in temporary network, because in emergency situation they don't to talk or type message , they will use the predefined text messages.

1. INTRODUCTION

Mobile ad hoc network is collections of wireless nodes that can allow people and devices to communicate with each other without help of an existing infrastructure, e.g., disaster recovery environments . A MANET is self configuring and self-organize into arbitrary and temporary, mobile node can be work as router or host.

MANET day after day gets new applications ranging from military applications for connecting soldiers in battlefields and social or business application such as Public and Personal Area Networks, other applications are recently under development will also gain from mobile ad hoc network advantages such as telemedicine, weather conditions report, and disaster environment such as in seism. All the examples above of use predict for some envisioned mobile ad hoc network to increase in range to reach the threshold of thousands of nodes per system (commercial or military). One of the most challenges in mobile ad hoc network is routing protocols. The primary goal of routing protocols is to find the path between the source and destination and deliver the data packets in timely manner. In ad hoc networks, high mobility, limited computing capability, and low bandwidth characteristics of mobile nodes make routing data is one of the most difficult issues.

Over past few years significant development in Wireless Technology, Day to day new technologies arrives.This paper introduces the concept of bypasser system and predefined message concept.

Collection of wireless nodes forming network with centralized system called as By-passer without aid of any established infrastructure. Often times however mobile user will wants to communicate in situations in which no fixed wired infrastructure such as this is available,either because it may not economically practical or physically possible to provide the necessary infrastructure or because the expediency of the situation does not permit its installation.

In temporary network one hosts considered as bypasser like central system. The sender wants to communicate with receiver system it has to establish the route between sender and the receiver generally, but here establish the route to bypasser only.bypasser will establish the route all destination. Sender sends all the messages to bypasser and this bypasser passes all the messages to destination nodes.

This paper introduce a new concept called as pre defined message concept, while forming a temporary network nodes are define with some predefined messages like templates in mobile.

In network sender sends a message to bypasser with destination address ,bypasser verify the message and it reply to sender from predefined message list liken"yes I received, will forward to the destination" and it forward the messages to the destination. After delivered the message to receiver bypasser immediately inform to the sender about the message is delivered . Then bypasser forward the Reply whatever comes from receiver .Here sender and receiver and all no need to worry about nodes are free or busy, any communication failure means when will re forward the message and all.centralized system bypasser will do all these things.

2. RELATED WORK

Xin Yu and Zvi M. Kedem[1] *NYU Computer Science Department Technical Report December 20, 2004. "A Distributed Adaptive Cache Update Algorithm for the Dynamic Source Routing Protocol ⌊"* . In this paper, we investigate how to make route caches adapt quickly to topology changes without using ad hoc mechanisms.When a node detects a link failure, our goal is to notify all reachable nodes whose caches contain the broken link to update their caches. To achieve this goal, we define a new cache structure called a cache table and present a distributed cache update algorithm. In a cache table, a node not only stores routes but also maintains the information necessary for cache updates. Each node maintains two types of information for each route: (1) how well the routing information is synchronized among nodes on the route, and (2) which neighbor node has learned which links through a ROUTE REPLY. Thus, for each cached link, a node knows which neighbor nodes have cached that link. When a link failure is detected, the algorithm notifies the neighborhood nodes that have that link in their caches. When a node receives a notification, the algorithm notifies selected neighbors. Therefore, the broken link information will be quickly propagated to all the reachable nodes that have the broken link in their caches.**C. Chaudet and I.G. Lassous,[2]** *"Evaluation of the BRuIT Protocol," Proc. IEEE 61st Semiannual Vehicular Technology Conf. (VTC Spring '05), May 2005*. In BRuIT, a bandwidth reservation protocol for ad hoc networks that takes into account influence of distant emitters on medium availability, has been described in broad outline. This article presents enhancements and evaluations of BRuIT. We justify the choices made in BRuIT, especially on the range of available resources information, with a stochastic geometry analysis. The simulation results show that this protocol enhances the network usage by not overloading the medium at the cost of longer routes and a larger establishment time. Nevertheless, the load is better balanced in the network, therefore network capacity is not overloaded. This results in more stable routes and less control traffic as almost no reconstructions are Needed.

Rajendra V. Boppana Anket Mathur [3] *CS Department, UT San Antonio, USA Workshop on Next Generation Wireless Networks, December 2005"Analysis of the Dynamic Source Routing Protocol for Ad Hoc Networks"* mobile ad-hoc network (MANET) is a multi-hop wireless network formed by a group of mobile nodes that have wireless capabilities and are in proximity of each other. MANETs facilitate communication among mobile users in situations—military or civil emergency–where fixed infrastructure is infeasible. Most MANETs are based on IEEE 802.11 or WiFi medium access control (MAC) standard [14]. To find a route to its destination, a source broadcasts a *route request* packet to all nodes within its radio transmission range. In addition to the addresses of the source and the destination nodes, a route request packet contains a *route record*, which is an accumulated record of nodes visited by the route request packet. When a node receives a route request, it does the following. If the destination address of the request matches its own address, then it is the *destination*. The route record in the packet contains the route by which the request reached this node from the source. This route is sent back to the source in a *route reply* packet by following the same route in reverse order. (We assume bidirectional links. The alternative reply mechanism for unidirectional links is not considered here.) Otherwise, it is an *intermediate* node. If the node has not seen this request before and has a route to the destination in its cache table, it creates a route reply packet with the route from its cache, and sends it back to the source. Such replies are called Intermediate-Node replies; if it does not have a route, it appends its own address to the route record, increments hop count by one, and rebroadcasts the request. When the source receives a route reply, it adds this route to its cache and sends any pending data packets.

If any link on a source route is broken (detected by the MAC layer of the transmitting node), a *route error* packet is generated. The route error is unicasted back to the source using the part of the route traversed so far, erasing all entries that contain the broken link in the route caches along the way. **Naseer Ali Husieen et al.[4]** *2011 International Conference on Information and Network Technology IACSIT Press, Singapore, Route Cache Update Mechanisms in DSR Protocol – A Survey"* Recently, there has been a growing interest in Mobile Ad Hoc Network (MANET). Ad hoc network becomes popular since it can provide useful personal communication in certain applications such as battlefield, academic, and business without any support where no fixed infrastructure exists. All mobile nodes communicate with each other direct or through intermediate node using any routing protocol. This paper has focused mainly on Dynamic Source Routing (DSR) protocol regarding route cache.

Present with high mobility situations and high load traffic network stale routes will be generated in the route cache which is big issue in DSR protocol. These stale routes can cause increase packet loss, long delay and reduce the efficiency of the performance of DSR protocol. Therefore efficient mechanism for updating the routes in the cache of DSR protocol is needed. **Defrawy and Gene Tsudik[5]** *ALARM: Anonymous Location-Aided Routing in Suspicious MANETs Karim El* In many traditional mobile network scenarios,nodes establish communication on the basis of persistent public identities. However, in some hostile and suspicious MANET settings, node identities must not be exposed and node movements must be untraceable. Instead, nodes need to communicate on the basis of nothing more than their current locations. In this paper, we address some interesting issues arising in such MANETs by designing an anonymous routing framework (ALARM). It uses nodes' current locations to construct a secure MANET map. Based on the current map, each node can decide which other nodes it wants to communicate with. ALARM takes advantage of some advanced cryptographic primitives to achieve node authentication, data integrity, anonymity and untraceability (tracking-resistance). It also offers resistance to certain insider attacks. In the last 10-15 years, research in various aspects of mobile ad-hoc networks (MANETS) has been very active, motivated mainly by allegedly important and numerous applications in law enforcement, military and emergency response scenarios. More recently, location information has become increasingly available through small and inexpensive GPS receivers. There is also an emerging trend to incorporate location-sensing into personal handheld devices [1]. Combining ad hoc networking with location information facilitates some appealing new applications,such as location-based advertising and focused dissemination of critical information. **Gayathri C and Manjula G[6]** *Pre Active Circulated Cache Updating using Dynamic Source Routing Protocol*,Routing protocols for ad hoc networks can be classified into two major types: *proactive* and *on-demand*. Proactive protocols attempt to maintain up-to-date routing information to all nodes by periodically disseminating topology updates throughout the network. In contrast, on demand protocols attempt to discover a route only when a route is needed. To reduce the overhead and the latency of initiating a route discovery for each packet, -demand routing protocols use route Caches.

Due to mobility, cached routes easily become stale. Using stale routes causes packet losses, and increases latency and overhead. In this paper, we investigate how to make on-demand routing Protocols adapt quickly to topology changes. This problem is important because such protocols use route caches to make routing decisions; it is challenging because topology changes are frequent.

To address the cache staleness issue in DSR (the Dynamic Source Routing protocol) prior work used adaptive timeout mechanisms. Such mechanisms use heuristics with ad hoc parameters to predict the lifetime of a link or a route. However, a predetermined choice of ad hoc parameters for certain scenarios may not work well for others, and scenarios in the real world are different from those used in simulations. Moreover, heuristics cannot accurately estimate timeouts because topology changes are unpredictable. As a result, either valid routes will be removed or stale routes will be kept in caches.A new cache structure called a cache table is defined to maintain the information necessary for cache updates. A distributed cache update algorithm that uses the local information kept by each node to notify all reachable nodes that have cached a broken link is proposed. The algorithm enables dynamic source routing to adapt quickly to topology changes and present a distributed cache update algorithm. Each node maintains in its cache table the information necessary for cache updates. The source node has the information regarding about the destination and the intermediate node links failure, so that it is useful from further packet loss and reduce the latency time while data transfer throughout the network. The newly proposed algorithm quickly removes stale routes irrespective of node mobility and traffic model.

3. IMPLEMENTATION

The implementation of Collection of wireless nodes forming network with centralized system called as By-passer without aid of any established infrastructure. Often times however mobile user will wants to communicate in situations in which no fixed wired infrastructure such as this is available,either because it may not economically practical or physically possible to provide the necessary infrastructure or because the expediency of the situation does not permit its installation by using the technique of dynamic source routing.

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