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Multi - Copy Routing Techniques For Mobile Communal Networks Using Homing Spread

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Abstract *- Networking is the practice of linking computer devices together to support digital communication among them. Delay tolerant network is an important network in mobile social network. Mobile Social Network is to share the information carried by short distance wireless communication device. The node in a network normally visits certain location frequently. Existing system nodes are randomly available and also security loss, time loss. In proposed system zero-knowledge multi-copy routing algorithm, homing spread algorithm is used for homogeneous (MSN) with higher priority in which all mobile node share information in the community home. The main purpose of homing spread is to spread the given number of message copies in an optimal way. Finally message delivers to the receiver node. The receiver node sends acknowledgment to the homing. After getting an acknowledgment each node has delete the message copies except homing spread. A Mobile Social Network (MSN) is a special kind of delay tolerant network (DTN) composed of mobile nodes that move around and share information with each other through their carried short-distance wireless communication devices. A main characteristic of MSNs is that mobile nodes in the networks generally visit some locations (namely, community homes) frequently, while visiting other locations less frequently. Here propose a novel zero-knowledge multi-copy routing algorithm, homing spread (HS), for homogeneous MSNs, in which all mobile nodes share all community homes. HS is a distributed and localized algorithm. By using homes to spread messages faster, and to display the message storage in graph, HS achieves a better performance than existing zero-knowledge MSN routing algorithms, including Epidemic (with a given number of copies), and Spray & Wait.*

Key Words: *Mobile social networks, Routing, Community, Delay tolerant networks ,Homing spread.*

1. INTRODUCTION

It is more commonly implemented where less then ten computers are involved and where strict security is not necessary. A computer network comprises the following components. Cables that connect the computers to each other, although wireless communication is becoming more common (see Advice Sheet 20 for more information).A network interface *device on each computer (this is called a network interface card or NIC).A 'Switch' used to switch the data from one point to another. Hubs are outdated and are little used for new installations the network can share devices, such as printers or scanners, which are connected to any one computer. A wireless local area network (WLAN) consists of two key components: an access point (also called a base station) and a wireless card.Information can be transmitted between these two components as long as they are fairly close together (up to 100 metres indoors or 350 metres outdoors) Wireless networks can be configured to provide the same network functionality as wired networks, ranging from simple peer-to-peer configurations to large scale networks accommodating hundreds of users. Networks provide a very rapid method f or sharing and transferring files Without a network, files are shared by copying them to floppy disks, then carrying or sending the disks from one computer to another. This method of transferring files in this manner is very time-consuming. Network interface cards for wireless networks are more expensive than their wired counterparts. The cost of the access points has also to be considered. Wireless networks work at up top 54Mbps wired networks normally work at 100Mbps (Fast Ethernet. A wireless network will be noticeably slow when a group of users are transferring large files. security features the equipment provides to ensure that only valid users have access to the network and that data is protected. Files and programs on a network can be designated as "copy inhibit," so that you do not have to worry about illegal copying of programs. Also, passwords can be established for specific directories to restrict access to authorized users.*

2. SYSTEM MODEL

In this section we consider the existing system de sign and the proposed system.

2.1 Existing System

Existing zero-knowledge Mobile Social Network routing algorithms have two categories.

Knowledge-based Routing Algorithms :

probability-basedalgorithms,social-aware algorithms.The both algorithms are assumed to have known some contact probabilities between nodes or some social characteristics of nodes, and then they use this knowledge to guide their messagedeliveries. Zero-knowledge routing algorithms Zero-knowledge routing algorithms do not require any prior knowledge. Multi- cast in Delay Tolerant Network swith single and multiple data items, investigate the essential difference between multicast and unicast in DTNs. Extensive trace-driven simulations show that our approach has similar delivery ratio and delay to the Epidemic routing, but can significantly reduce the data forwarding cost measured by the number of relays used.

Homing Spread :

Epidemic spreads messages to each encountered node through the flooding strategy. To avoid producing too many message copies, Epidemic in the real implementation generally limits the maximum number of copies.Spray&Wait also limits the number of copies. Moreover, it adopts a binary splitting method to spread copies into the network until one message holder encounters the destination. The large amount of cost-effectiveness of multicast in DTNs.Most existing solutions only focus on forwarding data to a single destination.Due to low node density and unpredictable node mobility, end-to-end connections are hard to maintain.

Problem Identified:

- Solely process and less efficient.
- Low performance.
- Both of the algorithms assume that all nodes just randomly walk in a given area, and that nodes visit all locations in a uniformly random way.
- DTN routing protocols is to increase the likelihood of finding a path with extremely limited information.
- DTN routing protocol only incidental performance improvement from various routing mechanisms and protocol design choices.

2.2 Proposed System

Zero-knowledge multi-copy routing algorithm, homing spread (HS), for homogeneous MSNs, in which all mobile nodes share all community homes.Community homes spread messages with a higher priority.With low bandwidth frequency. Heterogeneity validates the use of Social Network Analysis (SNA) for data forwarding in DTNs. There are two key concepts in SNA methods are Communities,Centrality the main advantage is to access the essential difference between multicast and unicast in DTNs is that, a selected relay for multicast is expected to forward data to as many destinations as possible.

Benefits:

- *Homing Spread utilizes the home feature and sends the messages quickly.*
- *Homes to spread messages faster and it achieves a better performance.*
- *Community homes are important factors in message spreading.*
- *The throw box is used to copy and dump the information on it.*
- *In a real time dataset using the real throw box.*

3. DESIGN CONSTRUCTION

This Section consists of the following module design are to be explained in this section.

3.1 Community Network Creation and Access Poin t Allocation

The community home mainly organize the nodes. A main characteristic of Mobile Social Network is that mobile nodes in the networks generally visit some locations frequently, while visiting other locations less frequently. The community home have a home. That home spread the messages via using homing spread. Homing spread (HS), for homogeneous MSNs, in which all mobile nodes share all community homes. HS is a distributed and localized algorithm. It mainly lets community homes spread messages with a higher priority. Those homes are called an Access point.

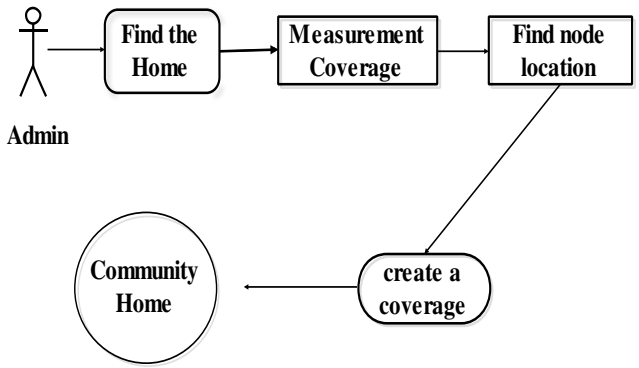


Fig-1: Community Network Creation and Access Point Allocation

3.2 Throw box Creation and Fetch Copy

The throw box can used to dump a message copies from a user. Each community home only create the throw box or simply, home in real traces can support a real throw box, a device that can locally store and forward messages, or can let the nodes that are visiting it act as virtual throw boxes. Such social characteristics can be utilized to guide message deliveries so as to improve the routing performance. The message Holder dumps all copies into the throw box of the home. And throw box is ready to send the messages to other nodes. To ensure that you can develop managed code that can be fully used by developers using any programming language, a set of language features and rules for using them called the common language specification.

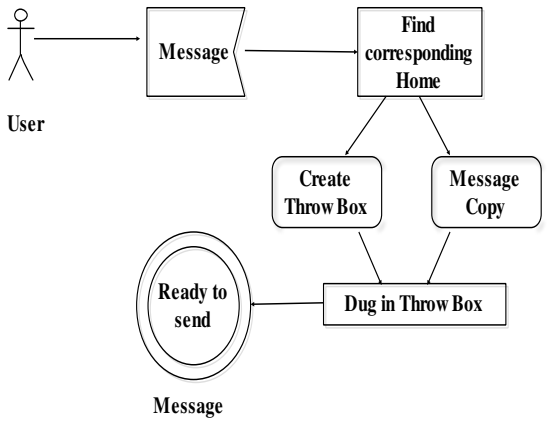


Fig-2: Throw box Creation and Fetch Copy

3.3 Homing Spread Access

The homing phase, the source sends copies quickly to homes. Upon reaching the first home, the message holder which includes the source dumps all copies into the throw box of the home. When roaming occurs a message holder meets another node at a normal location before reaching a home, copies are split between the two nodes and both become message holders. HS algorithm to the heterogeneous MSNs, in which mobile nodes might have different community homes. We show that HS can still achieve good message delivery performance in the heterogeneous MSNs.

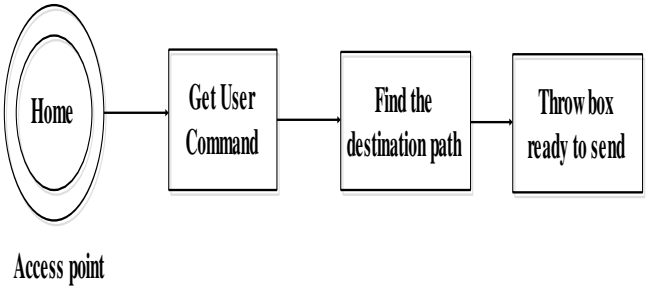


Fig-3: Homing Spread Access

3.4 DTN Destination

The Access point or home is ready to access when a message holder first visits a home, it will dump all copies into the home, and then it immediately enters the second phase to receive copies from the home. Reach other node via to fetch the message copies to spread out all corresponding nodes. That home plays an important role in the message spreading process. By using the notion of home, HS achieves a better performance via spreading and reaches the accurate destination without any delay time. Node mobility and end-to-end disconnections in Delay Tolerant Networks (DTNs) greatly impair the effectiveness of data dissemination. Extensive trace driven simulations show that our approach has similar delivery ratio and delay to the Epidemic routing, but can significantly reduce the data forwarding cost measured by the number of relays used.

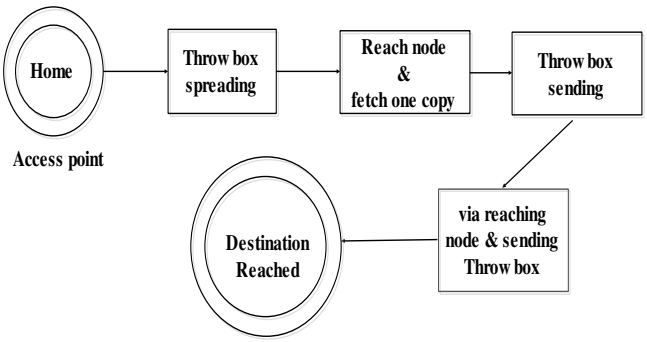


Fig-4: DTN Destination

3.5 Symmetric Encryption Messages:

The community home mainly organize the nodes. A main

characteristic of Mobile Social Network is that mobile nodes in the networks generally visit some locations frequently, while visiting other locations less frequently. The community home have a home. That home spread the messages via using homing spread. Homing spread (HS), for homogeneous MSNs, in which all mobile nodes share all community homes. Before spreading that Homing Spread message was encrypted using encryption technique which can be a number, a word, or just a string of random letters, is applied to the text of a message to change the content in a particular way. This might be as simple as shifting each letter by a number of places in the alphabet. HS is a distributed and localized algorithm. It mainly lets community homes spread messages with a higher priority. Those homes are called an Access point.

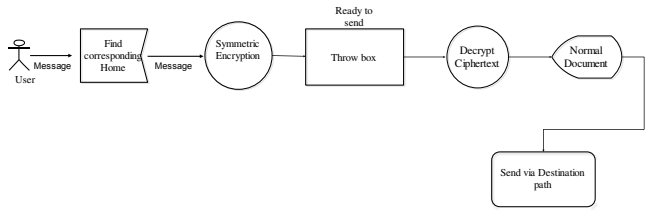
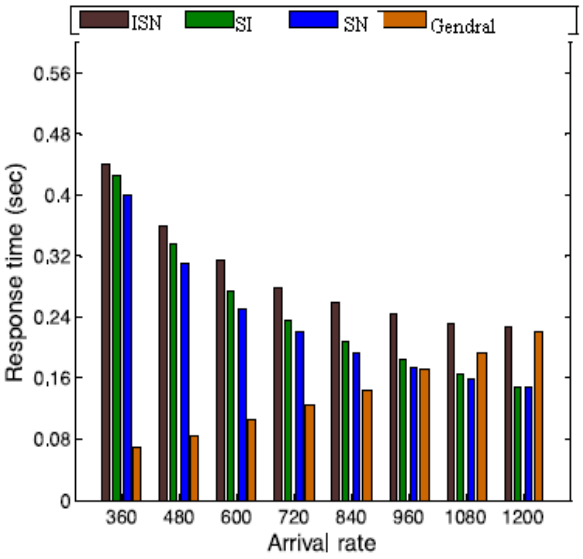


Fig-5: Symmetric Encryption Messages

4. PERFORMANCE *EVALUATION*

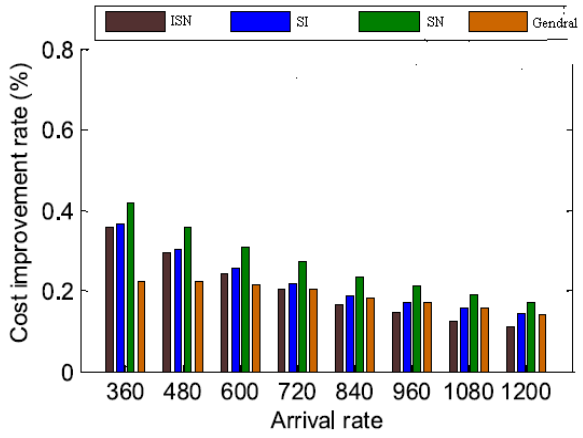
To evaluate the performance of HS .The algorithms in the comparison ,evaluation methods ,settings, and results are presented as follows.

4.1 Algorithms in Comparison Homing Spread *In this paper, focus on the zero-knowledge multi- copy routing a lgorithms for MSNs. performance comparison, we only co mpare the Homing Spread algorithm with the existing zer o-knowledge routing algorithms: the Spray &Wait .Both S pray& Wait and Epidemic deliver messages through replic ation. The message holder in Spray &Wait adopts the binr y scheme to split the copies among itself and the encounter ed.*



Chapter – 1 :-Algorithms in Comparison Homing Spre ad

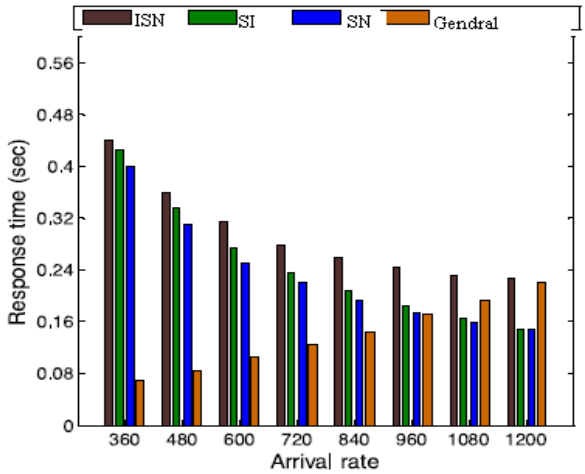
4.2 Simulation Settings and Metrics simulations are c onducted on synthetic traces: *A Time-Variant Communi ty Model provide the needed community information. In co ntrast, the TVCM model is a widely-adopted model derived from real MSNs. The model parameters as needed, so that reproduce various empirical mobile properties, which are beneficial to the performance evaluation of our algorithm. In the simulations Mobile nodes perform ran- point trips i nside and outside homes following the homing probability of each node, Nodes can communicate with each other onl y when they visit the same small square. Each home is equi pped with a throw box including the average delivery dela y and average delivery ratio. The average delivery delay is the delivery time for the message copy to reach its destinat ion. The average delivery ratio is the ratio of successful del iveries to all message deliveries.*



Chapter-2 :Simulation Settings and Metrics simulations are conducted on synthetic traces

4.3 Evaluation in Homogeneous Settings *:*

Routing algorithms, we record the average delivery delay of Epidemic in which only the source spreads the copies in the network, has the worst delivery delay. Spray &Wait, in which multiple nodes and homes help to spread the copies in the network, has a medium performance. Homing Spread, which mainly lets homes, assisted by nodes, spread the copies in the network, has the best performance among the three algorithms. The results also prove that homes play an important role in the message spreading process. of homes increases, or the homing probability increases, the average delivery delay of Homing Spread. homes, the homing probability, and the number of copies, while fixing other variables, respectively. Homing Spread can successfully deliver the messages more quickly, and can achieve an average delivery ratio that is much higher than those of Epidemic and Spray & Wait. The results also show that homes greatly affect the performance of message deliveries. When the number of homes



Chapter-3 : ***Evaluation in Homogeneous Settings***

A Mobile Social Network (MSN) is a special kind of delay tolerant network (DTN) composed of mobile nodes that move around and share information with each other through their carried short-distance wireless communication devices. A main characteristic of MSNs is that mobile nodes in the networks generally visit some locations (namely, community homes) frequently, while visiting other locations less frequently. Here propose a novel zero-knowledge multi-copy routing algorithm, homing spread (HS), for homogeneous MSNs, in which all mobile nodes share all community homes. HS is a distributed and localized algorithm. It mainly lets community homes spread messages with a higher priority. And also extend HS to the heterogeneous MSNs, where mobile nodes have different community homes. In addition, calculate the expected delivery delay of HS, and conduct extensive simulations. Results show that community homes are important factors in message spreading. Also added symmetric encryption algorithm for send a message secure via the throwbox, because in a corresponding path all nodes can identify the message easily.

5. CONCLUSION

A special type of mobile social network, where the routing space includes some frequently visited homes, and propose a zero-knowledge multi-copy routing algorithm called Homing Spread. HS utilizes the home feature and sets a higher priority for homes to help spread messages quickly. Theoretical analysis and simulation results show that homes play an important role in the message spreading process. To added a Symmetric encryption algorithm using the throw box messages send secure, HS achieves a better performance than existing zero knowledge MSN routing algorithms.
on an in-depth study of a heterogeneous setting, where nodes have different, but overlapping subsets of homes. And focus on the relationship between the density of Access Points and the performance of MSNs in Home Spread achieves a better performance.

REFERENCES

[1] J. Wu, M. Xiao, and L. Huang, “Homing spread: Community home-based multi-copy routing in mobile social networks,” in Proc. IEEE Conf. Comput. Commun., 2013, pp. 2319–2327.

[2] A. Balasubramanian, B. N. Levine, and A. Venkataramani, “DTN routingasa resourceallocationproblem,”inProc. ACMConf.Appl., Technol.,Archit.,ProtocolsComput.Commun.,2007, pp.373–384.

[3] J. Burgess, B. Gallagher, D. Jensen, and B. N. Levine, “Maxprop: Routing for vehicle-based disruption-tolerant networks,” in Proc. IEEE Conf. Comput. Commun., 2006, pp. 1–11.

[4] T. Spyropoulos, K. Psounis, and C. Raghavendra, “Spray and focus: Efficient mobility-assisted routing for heterogeneous and correlated mobility,” in Proc. 5th IEEE Int. Conf. Pervasive Comput. Commun. Workshops, 2007, pp. 79–85.

[5] X. Tie, A. Venkataramani, and A. Balasubramanian, “R3: Robust replication routing in wireless networks with diverse connectivity characteristics,” in Proc. ACM 17th Annu. Int. Conf. Mobile Comput. Netw., 2011, pp. 181–192.

[6] X. Chen, J. Shen, T. Groves, and J. Wu, "Probability delegation for- warding in delay tolerant networks," in Proc. 18th Int. Conf. IEEE Comput. Commun. Netw., 2009, pp. 1–6.

[7] P. Hui, J. Crowcroft, and E. Yoneki, "Bubble rap: Social-based for- warding in delay tolerant networks," in Proc. ACM 9th Int. Symp. Mobile Ad Hoc Netw. Comput., 2008, pp. 241–250.

[8] E. Daly and M. Haahr, "Social network analysis for routing in dis- connected delay-tolerant manets," in Proc. ACM 8th Int. Symp. Mobile Ad Hoc Netw. Comput., 2007, pp. 32–40.

[9] W. Gao, Q. Li, B. Zhao, and G. Cao, "Multicasting in delay tolerant networks: A social network perspective," in Proc. ACM 10th ACM Int. Symp. Mobile Ad Hoc Netw. Comput., 2009, pp. 299–308.

[10] M. Xiao, J. Wu, and L. Huang, "Community-aware opportunistic routing in mobile social networks," IEEE Trans. Comput., vol. PP, no.99,pp.1–14,2013.

[11] T. Ning, Z. Yang, H. Wu, and Z. Han, "Self-interest-driven incen- tives for ad dissemination in autonomous mobile social networks," in Proc. IEEE Conf. Comput. Commun., 2013, pp. 2310– 2318.

[12] L. Guo, C. Zhang, H. Yue, and Y. Fang, "A privacy-preserving social-assisted mobile content dissemination scheme in DTNs," in Proc. IEEE Conf. Comput. Commun., 2013, pp. 2301–2309.

[13] A. Vahdate and D. Becker, "Epidemic routing for partially-con- nected ad hoc networks," Duke Univ. Durham, NC, USA, Tech. Rep. CS-2000-06 Jun. 2000.

[14]T.Spyropoulos,K.Psounis,andC.Raghavendra,"Efficientrouting in intermittently connected mobile networks: The multiple-copy case,"IEEE/ACMTrans.Netw.,vol.16,no.1,pp.77–90,Feb.2008.

[15] T. Henderson, D. Kotz, and I. Abyzov, "The changing usage of a mature campus-wide wireless network," in Proc. ACM 10th Annu. Int. Conf. Mobile Comput. Netw., 2004, pp. 187–201.

[16] L. Jeremie, F. Timur, and C. Vania, "Evaluating mobility pattern space routing for DTNs," in Proc. IEEE 25th Int. Conf. Comput. Commun., 2006, pp. 1–10.

[17] T. Spyropoulos, K. Psounis, and C. S. Raghavendra, "Performance analysis of mobility-assisted routing," in ACM MobiHoc, 2006.

[18] W. Hsu, T. Spyropoulos, K. Psounis, and A. Helmy, "Modeling time-variant user mobility in wireless mobile networks," in Proc. IEEE 26th Int. Conf. Comput. Commun., 2007, pp. 758–766.

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