International Journal for Innovative Engineering and Management Research
A Peer Revieved Open Access International Journal
www.ijiemr.org

COPY RIGHT

IJIEMR Transactions, online available on 2nd June 2017. Link :
http://www.ijiemr.org/downloads.php?vol=Volume-6&issue=ISSUE-3

Title: Efficient File Sharing In Mobile Adhoc Network Through Replication Protocol

Volume 06, Issue 03, Pages: 543 – 552.

Paper Authors

***VLLIKANTI KEERTHI, C S MAHABOOBBEE, M SHIVALAKSHMI.**

*St.Mark Educational Institution Society Group of Institution, Ap, India.

USE THIS BARCODE TO ACCESS YOUR ONLINE PAPER

To Secure Your Paper As Per UGC Guidelines We Are Providing A Electronic Bar Code

International Journal for Innovative Engineering and Management Research
A Peer Revieved Open Access International Journal
www.ijiemr.org

Efficient File Sharing In Mobile Adhoc Network Through Replication Protocol

VLLIKANTI KEERTHI[1], C S MAHABOOBBEE[2] M SHIVALAKSHMI[3]

[1]PG Scholar, S.E, St.Mark Educational Institution Society Group of Institution, Ap, India
[2]Assistant Professor, CSE, St.Mark Educational Institution Society Group of Institution, Ap, India
[3]Assistant Professor, CSE, St.Mark Educational Institution Society Group of Institution, Ap, India

Abstract—File sharing applications in mobile ad hoc networks (MANETs) have attracted more and more attention in recent years. The efficiency of file querying suffers from the distinctive properties of such networks including node mobility and limited communication range and resource. An intuitive method to alleviate this problem is to create file replicas in the network. However, despite the efforts on file replication, no research has focused on the global optimal replica creation with minimum average querying delay. Specifically, current file replication protocols in mobile ad hoc networks have two shortcomings. First, they lack a rule to allocate limited resources to different files in order to minimize the average querying delay. Second, they simply consider storage as available resources for replicas, but neglect the fact that the file holders' frequency of meeting other nodes also plays an important role in determining file availability. Actually, a node that has a higher meeting frequency with others provides higher availability to its files. This becomes even more evident in sparsely distributed MANETs, in which nodes meet disruptively. In this paper, we introduce a new concept of resource for file replication, which considers both node storage and meeting frequency. We theoretically study the influence of resource allocation on the average querying delay and derive a resource allocation rule to minimize the average querying delay. We further propose a distributed file replication protocol to realize the proposed rule. Extensive trace-driven experiments with synthesized traces and real traces show that our protocol can achieve shorter average querying delay at a lower cost than current replication protocols.

1. INTRODUCTION

File sharing applications in mobile ad hoc networks (MANETs) have attracted more and more attention in recent years. The efficiency of file querying suffers from the distinctive properties of such networks including node mobility and limited communication range and resource. An intuitive method to alleviate this problem is to create file replicas in the network. However, despite the efforts on file replication, no research has focused on the global optimal replica creation with minimum average querying delay.

1.1 General Description

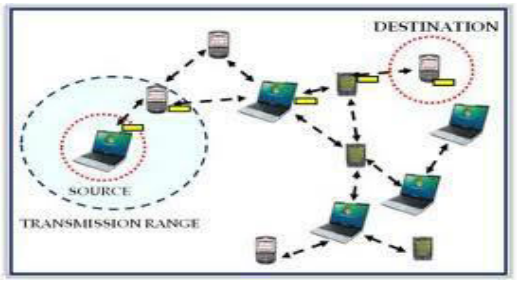

Fig 1.1 Structure of MANET

International Journal for Innovative Engineering and Management Research
A Peer Revieved Open Access International Journal
www.ijiemr.org

The term MANET (mobile advert hoc network) refers to a multihop packet based wireless community composed of a set of cellular nodes that may communicate and move at the same time, without the use of any kind of fixed wired infrastructure. MANET is honestly self-organizing and adaptive networks that may be fashioned and deformed on-the-fly without the need of any centralized management. In any other case, a stand for "mobile advert Hoc community" A MANET is a type of advert hoc network that may alternate locations and configure itself at the fly. due to the fact MANETS are cell, they use wireless connections to hook up with numerous networks. this could be a standard wireless connection, or another medium, inclusive of a mobile or satellite transmission.

1.2 How MANET Works

The motive of the MANET operating group is to standardize IP routing protocol capability appropriate for wireless routing application inside both static and dynamic topologies with extended dynamics due to node motion and other factors. strategies are intended to be exceptionally light-weight in nature, suitable for more than one hardware and Wi-Fi environments, and deal with eventualities where MANETs are deployed at the rims of an IP infrastructure. Hybrid mesh infrastructures (e.g., a aggregate of fixed and mobile routers) must additionally be supported by MANET specifications and management features. The usage of mature components from previous work on experimental reactive and proactive protocols, the WG will broaden two standards track routing protocol specs:

- Reactive MANET Protocol (RMP)
- Proactive MANET Protocol (PMP)

If tremendous commonality among RMRP and PMRP protocol modules is determined, the WG may decide to go together with a converged method. Each IPv4 and IPv6 could be supported. Routing protection requirements and problems will also be addressed.The MANET WG may even increase a scoped forwarding protocol that could successfully flood facts packets to all collaborating MANET nodes. The primary motive of this mechanism is a simplified first-rate effort multicast forwarding characteristic. Using this protocol is intended to be carried out best inside MANET routing regions and the WG effort could be confined to routing layer layout problems. The MANET WG will be aware of the OSPF-MANET protocol work in the OSPF WG and IRTF work this is addressing research topics associated with MANET environments.

2.1 A Delay/Disruption Tolerant Solution for Mobile to Mobile Files: A Delay/Disruption Tolerant Solution for Mobile to Mobile File Sharing "Due to mobility, communiqué links among cellular nodes is temporary and community preservation overhead is a major performance bottleneck for facts transmission. Low node density makes it tough to establish give up-to-end connection, as a result impeding a continuous quit-to-cease path between a source and a destination. This creates a modern-day form of DTN, which become firstly intended for conversation in outer area, but is now without delay accessible from our wallet. According to this problem, to present a special motive machine for looking and shifting documents tailored to each the characteristics of MANETs and the requirements of P2P file sharing. My approach is primarily based on an application layer overlay community. The

port a DTN kind solution into an infrastructure-less surroundings like MANETs and leverage peer mobility to reach statistics in other disconnected networks. That is carried out by way of enforcing an asynchronous communication version, save-delegate-and-ahead, like DTNs, in which a peer can delegate unaccomplished document download or query duties to special friends. to improve facts transmission overall performance even as lowering verbal exchange overhead, we select those unique peers via the expectation of encountering them once more in future and assign them exclusive download start line at the report. Infrastructure networks like Internet lack of total coverage of the territory, they suffer from what is called the last mile problem, Moreover, and in under development countries this problem is broader and persistent. Even though solutions exist they are considered expensive or at least they require time to be actuated. Meanwhile, with the growing number of mobile devices equipped with wireless interface, mobile users increasingly find themselves in different types of potential networking environments.

2.2 Adaptive Approaches to Relieving Broadcast Storms in A Wireless Multi-Hop Mobile Ad Hoc Network

In a multi-hop cell Ad- hoc network, broadcasting is a fundamental operation to assist many packages. Previously, it's miles proven that naively broadcasting via flooding may additionally purpose extreme redundancy, competition, and collision within the network, which we consult with as the broadcast typhoon hassle. Numerous threshold-primarily based schemes are shown to perform higher than flooding in those paintings. However, a way to pick thresholds additionally poses a quandary between reach ability and efficiency under specific host densities. On this paper, we advocate numerous adaptive schemes that may dynamically modify thresholds based totally on neighborhood connectivity records. Mobile and static nodes in battlefields or within the vicinity of disaster areas may not depend on fixed infrastructure for communication. To rapidly provide the required communication between the nodes in such environments, a Mobile Ad hoc Network(MANET) is the only available platform. With no fixed infrastructure, the efficient use of MANETs resources is highly crucial for the successful communication between mobile nodes. In situations where both the transmitting and the receiving nodes are placed within the transmission range of each other, communication is possible through a single-hop connection. In all other scenarios where the nodes are distanced, the exchange of packets is possible as long as a multi-hop path is available between them. Despite the unique characteristics of MANETs, they share many attributes and operations with other traditional networks. DNS lookups, exchange of control packets for management purposes and routing discovery requests are some examples of common operations, which all require broadcasting pieces of information across the network. However, due to lack of a centralized administrative and hardware, some modification is required to adopt broadcast operation for MANET environment. The most straightforward broadcast mechanism used in MANETs is Simple Flooding (SF).

2.3 A History Based Routing Protocol for Opportunistic Networks

In opportunistic networks the life of a simultaneous route among a sender and a receiver isn't always assumed. This version (which suits properly to pervasive networking environments) completely breaks the primary assumptions on which MANET routing protocols are constructed. Routing in opportunistic networks is commonly based on a few shape of managed flooding. However regularly this effects in very high resource intake and community congestion. On this scenario they advocate context-based routing for opportunistic networks. Should offer a popular framework for dealing with and the use of context for taking forwarding selections. To recommend a context-based protocol (HIBOP), and evaluate it with popular answers, i.e., Epidemic Routing and PROPHET. Results show that HIBOP is able to substantially lessen useful resource consumption. On the equal time, it appreciably reduces the message loss rate, and preserves the overall performance in phrases of message delay. The opportunistic network is an extension of Mobile Ad hoc Network (MANET). Wireless networks properties, such as disconnection of nodes, network partitions, mobility of users and links instability, are seen as exceptions in traditional network. This makes the design of MANET significantly more difficult. To Opportunistic networks are created out of mobile devices carried by people, without relying on any pre existing network topology. Opportunistic networks consider disconnections, mobility, partitions, etc. as norms instead of the exceptions. In opportunistic network mobility is used as a technique to provide communication between disconnected groups of nodes, rather than a drawback to be solved.

In opportunistic networking a complete path between two nodes wishing to communicate is unavailable. Opportunistic networking tries to solve this problem by removing the assumption of physical end-to-end connectivity and allows such nodes to exchange messages. By using the store-carry-and-forward paradigm intermediate nodes store messages when there is no forwarding opportunity towards the destination, and exploit any future contact opportunity with other mobile devices to bring the messages closer and closer to the destination. Therefore routing is one of the most compelling challenges. The design of efficient routing protocols for opportunistic networks is generally a difficult task due to the absence of knowledge about the network topology.Routing performance depends on knowledge about the expected topology of the network. Unfortunately, this kind of information is not always available. Context information is a key piece of knowledge to design efficient routing protocols. Context information represents users working address and institution, the probability of meeting with other users or visiting particular places. It represents the current working environment and behaviour of users. It is very help full to identify suitable forwarders based on context information about the destination. They can classify the main routing approaches proposed in the literature based on the amount of context information of users they exploit. Specifically, to identify two classes, corresponding to context-oblivious and context-aware protocols. Protocols in Context-oblivious routing class as Epidemic Routing Protocol are only solution when context information about users is not available. But they generate high overhead, network congestion and may suffer high contention. Context-based routing provides an effective congestion control mechanism

International Journal for Innovative Engineering and Management Research
A Peer Revieved Open Access International Journal
www.ijiemr.org

and with respect to context-oblivious routing ,Provides acceptable QOS with lower overhead.

3 Existing System

Replicas are easily created in the machine, thereby losing sources. Inside the latter, although redundant replicas are reduced by institution based totally cooperation, neighbouring nodes may cut loose each other due to node mobility, main to large query postpone. There also are a few works addressing content material caching in disconnected MANETs/ DTNs for green statistics retrieval or message routing. They basically cache information which is often queried on locations which can be visited frequently by using cellular nodes. Each the 2 categories of replication techniques fail to very well consider that a node's mobility impacts the availability of its documents.

3.1.1 Disadvantages of Existing System

- Node mobility, confined conversation range and useful resource, have rendered many difficulties in realizing this type of P2P record sharing device.
- Broadcasting can quick discover documents, but it results in the published hurricane trouble with excessive strength consumption.

Despite efforts, modern-day record replication protocols lack a rule to allocate confined sources to documents for replica introduction that allows you to obtain the minimal average querying delay.

3.2 Proposed System

In this System Introduce a new concept of resource for file replication, which considers both node storage and node meeting potential? To propose the theoretically observe the impact of useful resource allocation at the common querying delay and derive an premiere document replication rule (OFRR) that allocates assets to each document based totally on its reputation and length. Here they recommend a report replication protocol based totally on the guideline, which approximates the minimal global querying postpone in a totally disbursed manner. We suggest a distributed record replication protocol that could approximately recognize the highest quality record replication rule with the two mobility models in a distributed way.

3.2.1 Advantages of Proposed System

In our experiment and simulation outcomes display the advanced overall performance of the proposed protocol in evaluation with different representative replication protocols.

3.3 System Architecture

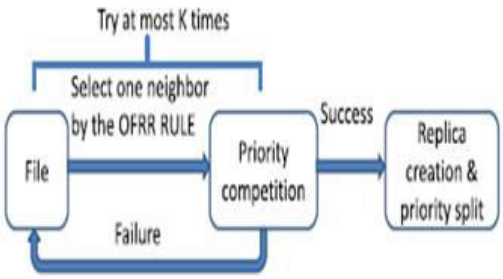

Fig 3.3.1 System Architecture

Block Diagram

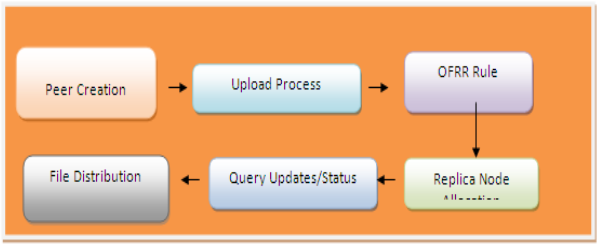

Fig: 3.3.2 Block Diagram of Replica Workflow

International Journal for Innovative Engineering and Management Research
A Peer Revieved Open Access International Journal
www.ijiemr.org

Here peer creation node can be created , upload process and it is satisfied the OFRR Rule . after replica node allocation it is node can be allocate . query update and status . and then file distribution to the other node .In file can satisfied the OFRR rule based on priority completion. try the file k times . if the file is success after that replica creation and priority split. if the file is not success try until OFRR rule is satisfied.

3.4 System Study

3.4.1 Feasibility Study

The feasibility of the challenge is analyzed on this phase and enterprise concept is placed forth with a totally fashionable plan for the venture and a few price estimates. Throughout device evaluation the feasibility look at of the proposed machine is to be performed. This is to make certain that the proposed machine isn't a burden to the employer. For feasibility evaluation, some knowledge of the essential necessities for the device is essential.

Three key considerations involved in the feasibility analysis are

- Economical feasibility
- Technical feasibility
- Social feasibility

3.4.2 Economical Feasibility

This observes is accomplished to check the financial effect that the gadget could have at the enterprise. The amount of fund that the company can pour into the studies and development of the machine is constrained. The costs have to be justified. consequently the developed system as nicely inside the finances and this became carried out due to the fact maximum of the technology used are freely to be had. Simplest the customized merchandise needed to be bought.

3.4.3 Technical Feasibility

This study is completed to check the technical feasibility, that is, the technical requirements of the device. Any device advanced ought to now not have a excessive demand on the available technical sources. This can cause excessive demands on the available technical resources. This could result in excessive demands being placed on the customer. The advanced machine need to have a modest requirement, as only minimal or null modifications are required for imposing this device.

3.4.4 Social Feasibility

The thing of observe is to test the level of popularity of the machine through the person. This consists of the process of schooling the person to apply the system efficaciously. The consumer must now not feel threatened by the system, as a substitute ought to accept it as a necessity. The extent of acceptance by using the customers solely relies upon on the techniques which might be hired to train the person approximately the machine and to make him acquainted with it. His level of confidence need to be raised so that he's also able to make a few positive criticisms, that's welcomed, as he is the final person of the machine.

Summary

Here introduce a new concept of resource for file replication, which considers both node storage and meeting frequency. Theoretically study the influence of resource allocation on the average querying delay and derive a resource allocation rule to minimize the average querying delay. Further propose

International Journal for Innovative Engineering and Management Research
A Peer Revieved Open Access International Journal
www.ijiemr.org

a distributed file replication protocol to realize the proposed rule. Extensive trace-driven experiments with synthesized traces and real traces show that our protocol can achieve shorter average querying delay at a lower cost than current replication protocols.

First Node Distance

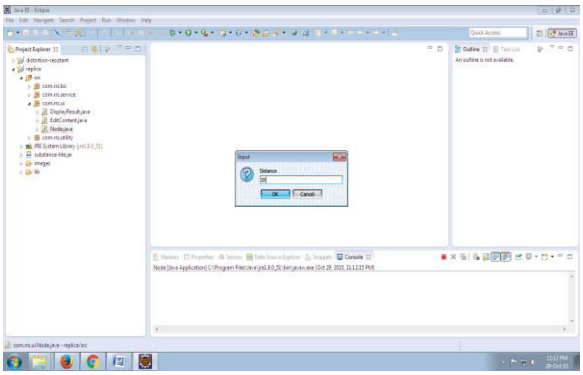

Fig7.2.1 First Node Distance

Here mention the above box enter the value of the node distance, as like input .After click the ok button ,then showing the node information as displays the below screen chart .As like the this similar data process as continued further n number of nodes.

7.2.2 First Node Details

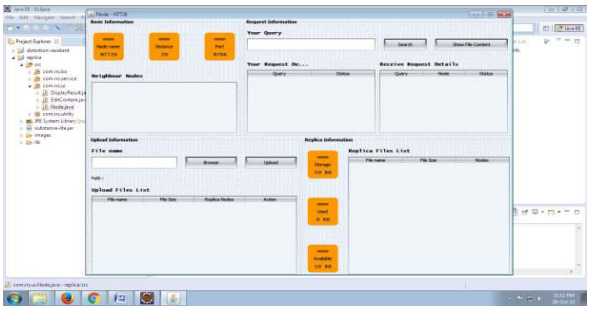

Fig 7.2.2 First Node Details

After enter into the distance in the input dialogue box then it can be displayed node name, distance, port number and storage capacity of the node, used data, available space, file name ,uploaded information, uploaded files list, replica file list etc data will displayed this screen chart.

7.2.3 Second Node Distance

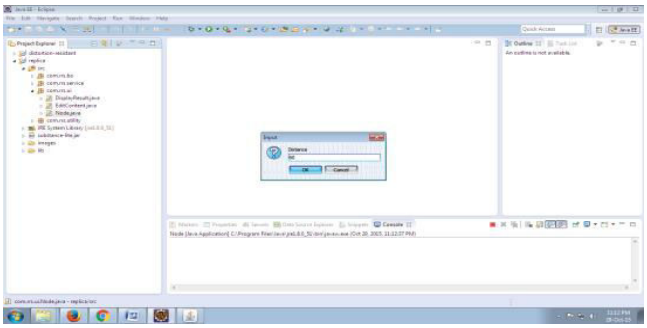

Fig 7.2.3 Second Node Distance

Again enter the second node distance in the input dialogue box by using the OFFR rule. Then click the ok button otherwise click the cancel.

7.2.4 Second Node Details

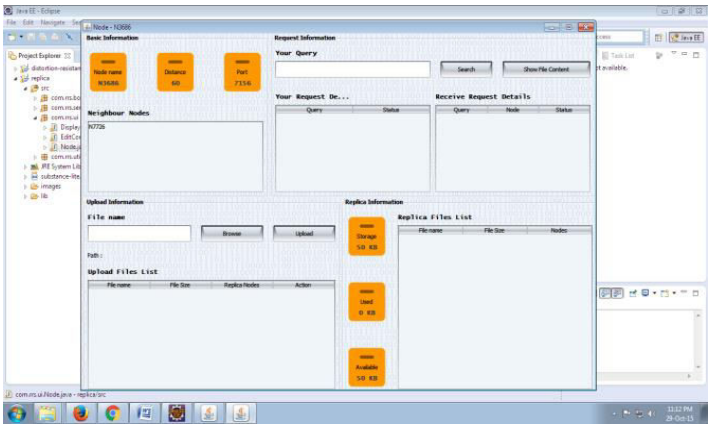

Fig 7.2.4 Second Node Details

Here we observe the second node details as like neighbour node‘s information. And look the replica file list following the file name, file status, number node, in upload file list showing the file name, file state, replica nodes, and action.

International Journal for Innovative Engineering and Management Research
A Peer Revieved Open Access International Journal
www.ijiemr.org

7.2.5 Third Node Distance

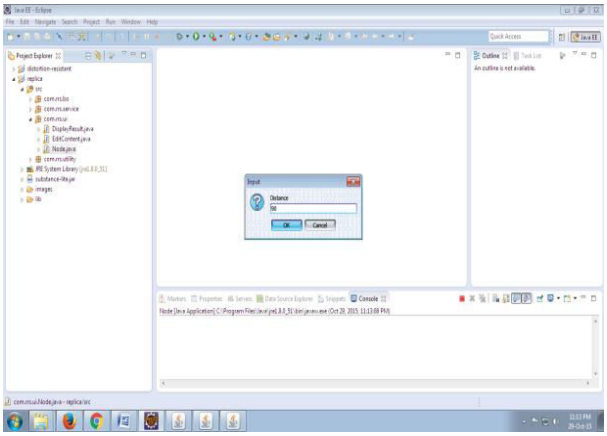

Fig 7.2.5 Third Node Distance

Hear enter the third node distance in the input dialogue box by using the OFFR rule. Then click the ok button otherwise click the cancel.

7.2.6 Third Node Details

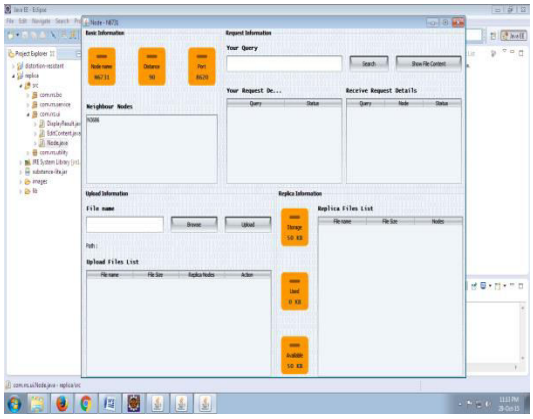

Fig 7.2.6 Third Node Details

Here we observe the fourth node details as like neighbour node‘s information. And look the replica file list following the file name, file status, number node, in upload file list showing the file name, file state, replica nodes, and action.

7.2.7 Fourth Node Distance

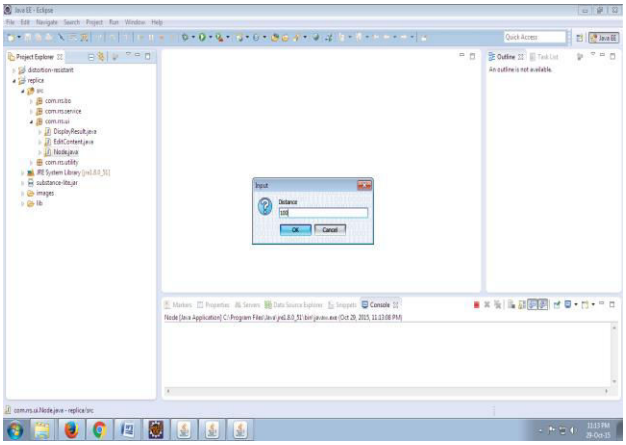

Fig 7.2.7 Fourth Node Distance

Again enter the fourth node distance in the input dialogue box by using the OFFR rule. Then click the ok button otherwise click the cancel.

7.2.8 Fourth Node Details

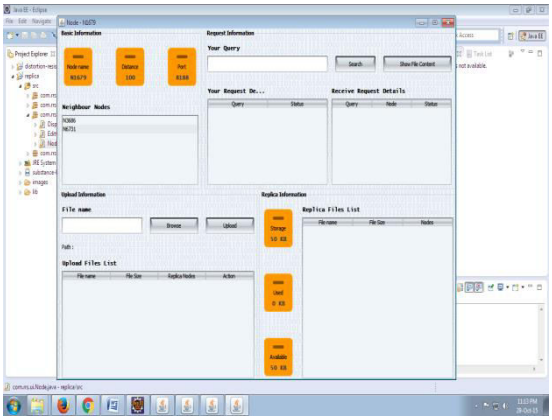

Fig 7.2.8 Fourth Node Details

Here we observe the two neighbouring nodes, And look the replica file list following the file name, file status, number node, in upload file list showing the file name, file state, replica nodes, and action.

CONCLUSION

Here introduce a new concept of resource for file replication, which considers both node storage and meeting frequency. Theoretically study the influence of resource allocation on the average querying delay and derive a resource allocation rule to minimize the average querying delay. Further propose a distributed file replication protocol to realize the proposed rule. Extensive trace-driven experiments with synthesized traces and real traces show that our protocol can achieve shorter average querying delay at a lower cost than current replication protocols. In our experiment and simulation outcomes display the advanced overall performance of the proposed protocol in evaluation with different representative replication protocols.Finally, designed the priority competition and split replication protocol (PCS) that realizes the optimal replication rule in a fully distributed manner. In this study, we focus on a static set of files in the network. In our future work, we will theoretically analyze a more complex environment including file dynamics (file addition and deletion, file timeout) and dynamic node querying pattern.

REFERENCES

[1] Kang Chen,Student Member, IEEE and Haiying Shen,Senior Member, IEEE, "Maximizing P2P File Access Availability in Mobile Ad Hoc Networks though Replication for Efficient File Sharing",

IEEE Transactions on Computers, vol. 64, no. 4, April 2015.

[2] "Flixwagon, " http://www.flixwagon.com/, 2014.

[3] C. Palazzi and A. Bujari, "A Delay/Disruption Tolerant Solution for Mobile to Mobile File Sharing," Proc. IFIP/IEEE Wireless Days, 2011.

[4] Y. Tseng, S. Ni, and E. Shih, "Adaptive Approaches to Relieving Broadcast Storms in a Wireless Multihop Mobile Ad Hoc Network," Proc. 21st Int'l Conf. Distributed Computing Systems (ICDCS), pp. 481-488, 2011.

[5] B. Chiara et al., "HiBOp: A History Based Routing Protocol for Opportunistic Networks," Proc. IEEE Int'l Symp. World of Wireless, Mobile and Multimedia Networks (WoWMoM), 2011.

[6] A. Lindgren, A. Doria, and O. Schelen, "Probabilistic Routing in Intermittently Connected Networks," ACM SIGMOBILE Mobile Computing and Comm. Rev., vol. 7, no. 3, pp. 19-20, 2003.

[7] F. Li and J. Wu, "MOPS: Providing Content-Based Service in Disruption-Tolerant Networks," Proc. IEEE 29th Int'l Conf. Distributed Computing Systems (ICDCS), 2009.

[8] S. Moussaoui, M. Guerroumi, and N. Badache, "Data Replication in Mobile Ad Hoc Networks," Proc. Second Int'l Conf. Mobile Ad-hoc and Sensor Networks (MSN), pp. 685-697, 2006.

[9] L. Yin and G. Cao, "Supporting Cooperative Caching in Ad Hoc Networks," IEEE Trans. Mobile Computing, vol. 5, no. 1, pp. 77-89, Jan. 2006.

[10] T. Hara and S.K. Madria, "Data Replication for Improving Data Accessibility in Ad Hoc Networks," IEEE

Trans. Mobile Computing, vol. 5, no. 11, pp. 1515-1532, Nov. 2006.

[11] H. Duong and I. Demeure, "Proactive Data Replication Semantic Information within Mobility Groups in MANET," Proc. Second Int'l Conf. MobileWireless Middleware, Operating Systems, and Applications (Mobilware), 2009.

[12] J. Broch, D.A. Maltz, D.B. Johnson, Y. Hu, and J.G. Jetcheva, "APerformance Comparison of Multi-Hop Wireless Ad Hoc Network Routing Protocols," Proc. ACM MOBICOM, pp. 85-97, 1998.

[13] M. Musolesi and C. Mascolo, "Designing Mobility Models Based on Social Network Theory," ACM SIGMOBILE Mobile Computing and Comm. Rev., vol. 11, pp. 59-70, 2007.

[14] Http://web.informatik.uni-bonn.de/IV/BoMoNet/BonnMotion.htm, 2014.

[15] J. Kangasharju, K.W. Ross, and D.A. Turner, "Optimizing File Availability in Peer-to-Peer Content Distribution," Proc. IEEE INFOCOM, 2007.