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Maximizing P2P File Access Availability in Mobile AD HOC Network Though Replication for Efficient File Sharing

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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. Hoitver, 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 project, it introduce a new concept of resource for file replication, which considers both node storage and meeting frequency. It theoretically study the influence of resource allocation on the average querying delay and derive a resource allocation rule to minimize the average querying delay. It 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 loitr cost than current replication protocols.

Keywords— **Mobile access, Ad hoc, networks.**

INTRODUCTION:

In the RWP model, it can assume that the inter-meeting time among nodes follows exponential distribution . Then, the probability of meeting a node is independent with the previous encountered node. Therefore, it define the meeting ability of a node as the average number of nodes it meets in a unit time and use it to investigate the optimal file replication. Specifically, if a node is able to meet more Notations in Analysis nodes, it has higher probability of being encountered by other nodes later on. It use mi to denote the probability that the next node a request holder meets is node i. Then, mi is proportional to node i's meeting ability.

The two solutions to handle the challenges in achieving the OFRR described above represent a maximal approximation to realize the OFRR in a distributed manner. Based on the solutions, it propose the priority competition and split file replication protocol (PCS). It first introduce how a node retrieves the parameters needed in PCS and then present the detail of PCS.

In PCS, each node dynamically updates its meeting ability (Vi) and the average meeting ability of all nodes in the system Such information is exchanged among neighbor nodes.

PERFORMANCE EVALUATION
HIT RATE

It is the percent of requests successfully resolved by either original files or replicas.

AVERAGE DELAY

This is the average delay of all requests. To make the comparison fair, it included all requests in the calculation. For unresolved requests, it set their delays as the TTL.

REPLICATION COST

This is the total number of messages generated in creating replicates.
Cumulative
Distribution Function (CDF) of the proportion of replicas. This is the CDF of the proportion of replicas of each file. This metric reflects the amount of resources allocated to each file for replication.

EXISTING SYSTEM

In the former, redundant replicas are easily created in the system, thereby wasting resources. In the latter, though redundant replicas are reduced by group based cooperation, neighboring nodes may separate from each other due to node mobility, leading to large query delay. There are also some works addressing content caching in disconnected MANETs/ DTNs for efficient data retrieval or message routing. They basically cache data that are frequently queried on places that are visited frequently by mobile nodes. Both the two categories of replication methods fail to thoroughly consider that a node's mobility affects the availability of its files.

DISADVANTAGES

Node mobility, limited communication range and resource, have rendered many difficulties in realizing such a P2P file sharing system.
Broadcasting can quickly discover files, but it leads to the broadcast storm problem with high energy consumption.
2.In spite of efforts, current file replication protocols lack a rule to allocate limited resources to files for replica creation in order to achieve the minimum average querying delay, i.e., global search efficiency optimization under limited resources. They simply consider storage as the resource for replicas, but neglect that a node's frequency to meet other nodes (meeting ability in short) also influences the availability of its files. Files in a node with a higher meeting ability have higher availability.

PROPOSED SYSTEM

In this project, it introduce a new concept of resource for file replication, which considers both node storage and node meeting ability. It theoretically study the influence of resource allocation on the average querying delay and derive an optimal file replication rule (OFRR) that allocates resources to each file based on its popularity and size. It then propose a file replication protocol based on the rule, which approximates the minimum global querying delay in a fully distributed manner. It propose a distributed file replication protocol that can approximately realize the optimal file replication rule with the two mobility models in a distributed manner.

ADVANTAGES

The experiment and simulation results show the superior performance of the proposed protocol in comparison with other representative replication protocols.

CONCLUSION

In this project, it investigated the problem of how to allocate limited resources for file replication for the purpose of global optimal file searching efficiency in MANETs. It first theoretically analyzed the influence of replica distribution on the average querying delay under constrained available resource under two mobility models, and derived an optimal replication rule to allocate the limited resource to file replicas in order to minimize the average querying delay. Unlike previous protocols that only consider storage space as resource, it also consider file holder's ability to meet nodes as available resource since it also affects the average querying delay. This new concept enhances the correctness of the deduced rule and the effectiveness of the accordingly developed replication protocol. Finally, it designed the Priority Competition and Split replication protocol (PCS) that realizes the proposed optimal replication rule in a fully distributed manner. Extensive experiments on both real-world GENI testbed, NS-2, and event-driven simulator with real trace and synthesized mobility confirm both the correctness of our theoretical analysis and the effectiveness of PCS in MANETs. In this study, it focus on a static set of files in the network. In our future work, it will theoretically analyze a more complex environment including file dynamics (file addition and deletion, file timeout) and dynamic node querying pattern.

REFERENCE

- Brezinski and T. Killalea. Guidelines for evidence collection and Archiving. RFC 3227, IETF, 2002.
- Stephen D. Wolthusen, Overcast: Forensic Discovery in Cloud Environments, 5th International Conference on ITS Security Incident Management and IT Forensics, pages: 3-9, 2009.
- Cheng Yan, Cybercrime forensic system in cloud computing, Image Analysis and Signal Processing (IASP), pages: 612-615, 2011.
- Stephen Biggs, Stilianos Vidalis. Cloud Computing: The impact on Digital forensic investigations. International Conference for Internet Technology and Secured Transactions, pages: 1-6, 2009.
- Hong Guo; Bo Jing. Forensic investigations in Cloud environments. International Conference on Computer Science and Information Processing (CSIP), pages: 248-251, 2012.

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