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Improving The Performance In Manet By Increasing The Availability And Reducing The Delay

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Abstract

In mobile ad hoc networks (MANETs), link/node failures are common, leading to frequent network partitions. So, mobile nodes in one partition are not able to access data hosted by nodes in other partitions, leading to performance degradation of data access. To deal with this problem, in existing system, data replication techniques are used in either wired or wireless networks and they aim at either reducing the query delay or improving the data availability, but not both. In this project, both increasing data availability and reducing query delay are performed. In this project, the nodes are partitioned into two networks, the data are analyzed, fussed and duplicated data in both the partitions are avoided using greedy scheme and a single copy of the original data are sent to the server and then using the router, it is sent to the requested client.

KEYWORDS-*Mobile ad hoc network (MANET), Greedy Scheme, data replication, query delay, data availability, aggregation.*

1. INTRODUCTION

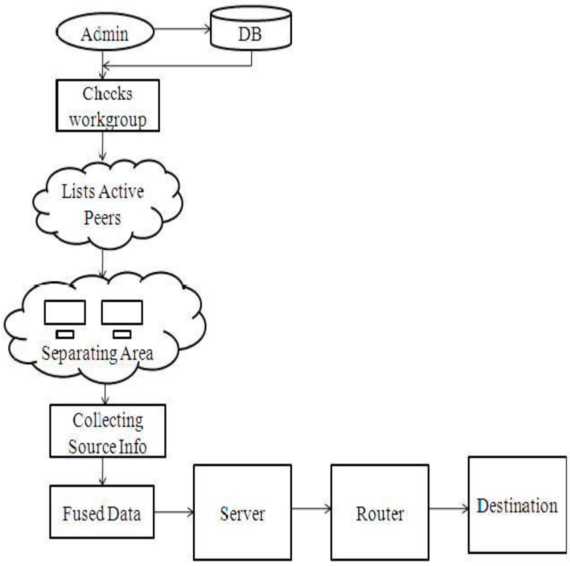
A mobile ad hoc network (MANET) is a network that allows mobile servers and clients to communicate in the absence of a fixed infrastructure. MANET is a fast growing area of research as it finds use in a variety of applications. In order to facilitate efficient data access and update, databases are deployed on MANETs. These databases that operate on MANETs are referred to as MANET databases. Since data availability in MANETs is affected by the mobility and power constraints of the servers and clients, data in MANETs are replicated. A number of data replication techniques have been proposed for MANET databases. This paper identifies issues involved in MANET data replication and attempts to classify existing MANET data replication techniques based on the issues they address. In a distributed database system, data are often replicated to improve reliability and availability, thus increasing its dependability. In addition, data are also stored on computers where it is most frequently needed in order to reduce the cost of expensive remote access. However, a reliable system might not always ensure high availability.

An important issue facing data replication is the correctness of the replicated data (often termed as data consistency) that exist in different systems Communication failure between two or more mobile nodes in a MANET may lead to network partitioning, where the network is divided into isolated sub networks, giving rise to the possibility of data inconsistency. In addition to node mobility, slow response from certain nodes may also cause a network to “appear” partitioned, even when it is not actually partitioned. A survey of various techniques to maintain data consistency in partitioned fixed networks . Ensuring one-copy serializability after reconnection of partitions is a serious issue in distributed database systems. A decision has to be made to abort/commit transactions that are running during the occurrence of partitioning. However, to the best of our knowledge, there exists no survey of data replication techniques for MANET databases. The aim of this paper is to fill in this gap by providing a comprehensive review of existing data replication techniques for MANET databases.

In this project, the nodes in the network are partitioned into two network partitions – partition A and partition B. The data from both the partitions are collected. Those data are analyzed, fussed and then compared. The duplicated data in both the partitions are then avoided using the greedy scheme and single copies of the original data are sent to the server and then using the router, it is sent to the requested client.

2. ARCHITECTURE

The following diagram describes the architecture for this paper.

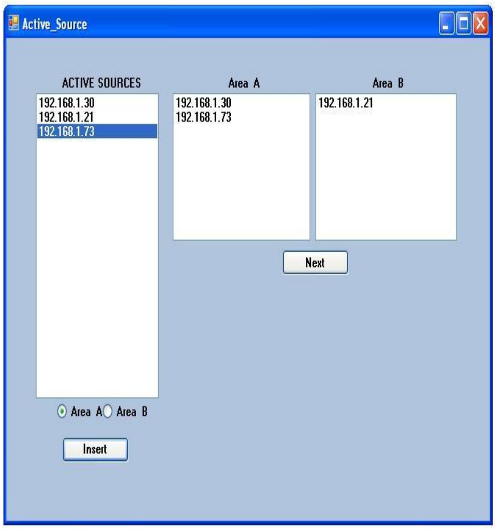


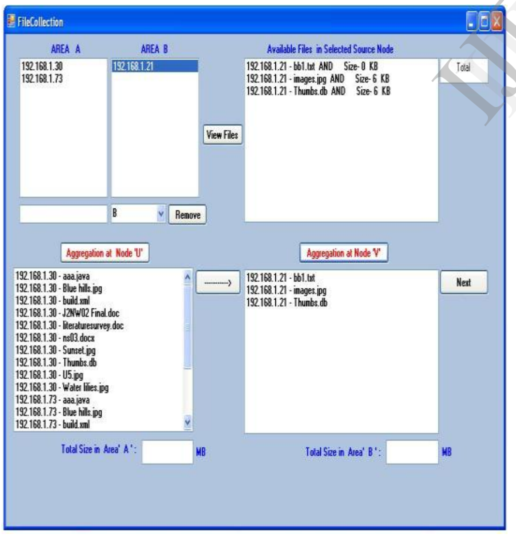
The User has to first log on to the network and submits the workgroup name of the network. The System generates the available number of Active Peers list in the network (i.e. the number of nodes connected to the network). The User can separate these nodes into two partitions – partition A and partition B. The data from all the nodes in partition A and partition B are collected. Those data are analyzed, compared and the duplicated data are avoided and this list sent to the Server. From the Server the data are sent to the Router. The Router then sends this data to the data to the corresponding Destination with a Single copy of the original data.

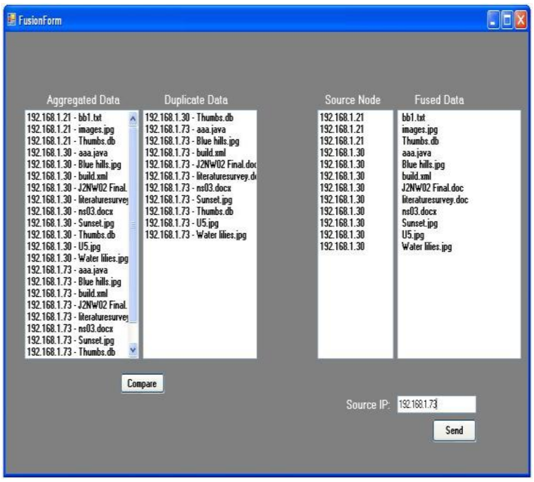
3. MODULE DESCRIPTION

3.1 TARGET SET SELECTION MODULE

The system depicts a target node at network where nodes are deployed on grid and sensed information of the source nodes is to be routed to sink t. Arrow lines form the aggregation tree in which nodes u and v initially aggregate data of areas A and B, respectively. As the sink is far away, u and v further aggregate their data at v.







3.2 SERVER

Server will test whether any duplicated data is existing or not. Then it forms the fused data which consists of aggregated data without any duplication. Finally it will send one fused data to the client /sink t through the router.

3.3 ROUTER

Router transmits the fused data to the client /sink. It assumes each hop has identical unit transmission cost. The fusion cost is linear to the total amount of incoming data. It determines the amount of data at u and v before the aggregation. In this scenario, to minimize the total energy consumption of the network, v should not perform data fusion.

3.4 CLIENT

The data are collected from A & B and tested for the existence of any duplicated data. Then the fused data is transmitted from the source node to the client /sink. Thus client receives the aggregated data without any duplication.

4. CONCLUSION

We propose to offload mobile data traffic through opportunistic communications and investigate the target-set selection problem for information delivery in MoSoNets. We present three algorithms for this problem, Random, Heuristic, and Greedy, and evaluate their performance through trace-driven simulation, using both large-scale synthetic and real-world mobility traces. The simulation results show that Greedy performs the best, followed by Heuristic. Although the Greedy algorithm may not be practical, it is the basis of the Heuristic algorithm which exploits the regularity of human mobility.

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