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GATHERING CONTENTS FROM VEHICULAR NETWORK USING VEHICULAR FILE TRANSFER PROTOCOL WITH GENETIC ALGORITHM

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ABSTRACT

In the present the protocol to efficiently retain information at a particular geographic location in a sparse network of highly mobile nodes without using infrastructure networks to retain information around certain physical location, each mobile device passing that location will carry the information for a short while. In an urban environment, vehicles can opportunistically exploit infrastructure through open Access Points (APs) to efficiently communicate with other vehicles. The performance limits of such a vehicular content downloading system is outlined by modeling the downloading process as an optimization problem, and maximizing the overall system throughput . To address this challenge, the boomerang protocol, similar to delay-tolerant communication, first allows a mobile node to carry packets away from their location of origin and periodically returns them to the anchor location. File transfer protocol is proposed in this paper to transfer the multimedia contents through the intermediate vehicles which is transferred. Genetic algorithm is proposed to calculate the efficiency.

Index Terms— mobile, location-aware information, infrastructure less data management, genetic algorithm, File transfer protocol.

1. INTRODUCTION

In a general-purpose computer that can be easily moved from place to place, but cannot be used while in transit, usually because it requires some "setting-up" and an AC power source. The most famous example is the Osborne 1. Portable computers are also called a "transportable" or a "luggable" PC. A tablet computer that lacks a keyboard (also known as a non-convertible tablet) is shaped like a slate or a paper notebook. Instead a physical keyboard it has a touch screen with some combination of virtual keyboard, stylus and/or handwriting recognition software. Tablets may not be best suited for applications requiring a physical keyboard for typ ing, but are otherwise capable of carrying out most of the tasks of an ordinary laptop. A personal digital assistant (PDA) is a small, usually pocket-sized, computer with limited functionality. It is intended to supplement and to synchronize with a desktop computer, giving access to contacts, address book, notes, e-mail and other features.

2. CHANNEL HOGGING AND FILE SHARING

There will be a hit to file sharing, the normal web surfer would want to look at a new web page every minute or so at 100 kbs a page loads quickly. Because of the changes to the security of wireless networks users will be unable to do huge file transfers because service providers want to reduce channel use. AT&T claimed that they would ban any of their users that they caught using peer-to-peer (P2P) file sharing applications on their 3G network. It then became apparent that it would keep any of their users from using their iTunes programs. The users would then be forced to find a Wi-Fi hotspot to be able to download files. The limits of wireless networking will not be cured by 4G, as there are too man y fundamental differences between wireless networking and other means of Internet access. If wireless vendors do not realize these differences and bandwidth limits, future wireless customers will find themselves disappointed and the market may suffer setback.

3. RELATED WORKS DSR PROTOCOL

The Dynamic Source Routing protocol, a simple as well as an efficient routing protocol is designed particularly for use in multi-hop wireless ad hoc networks, allows the network to be entirely self- organizing and self-configuring, without the requirement of any presented network infrastructure or the administration. All aspects of the protocol work entirely on-demand, permitting the routing packet overhead to scale automatically to only which needed to respond to various changes in the different routes currently in use.

4 AODV PROTOCOL

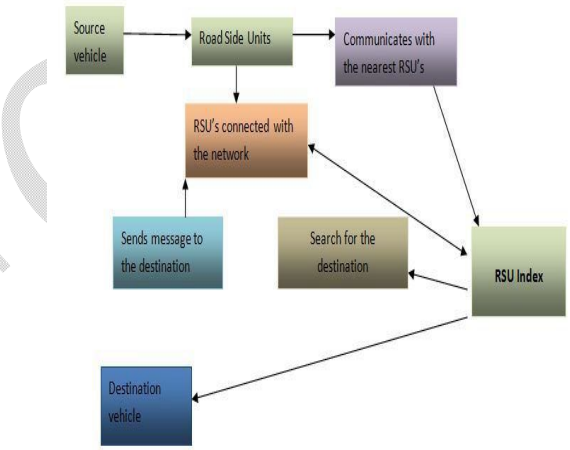
The AODV Routing protocol uses an on- demand approach for finding routes, that is, a route is established only when it is required by a source node for transmitting data packets. It employs destination sequence numbers to identify the most recent path. The major difference between AODV and Dynamic Source Routing (DSR) stems out from the fact that DSR uses source routing in which a data packet carries the complete path to be traversed. However, in AODV, the source node and the intermediate nodes store the next-hop information corresponding to each flow for data packet transmission. In an on-demand routing protocol, the source node floods the Route Request packet in the network when a route is not available for the desired destination. It may obtain multiple routes to different destinations from a single Route Request. The major difference between AODV and other on-demand routing protocols is that it uses a destination sequence number(DestSeqNum) to determine an up-to-date path to the destination. A node updates its path information only if the DestSeqNum of the current packet received is greater or equal than the lastDestSeqNum stored at the node with smaller hop count.

5. OLSR PROTOCOL

OLSR makes use of "Hello" messages to find its one hop neighbors and its two hop neighbors through their responses. The sender can then select its multipoint relays (MPR) based on the one hop node that offers the best routes to the two hop nodes. Each node has also an MPR selector set, which enumerates nodes that have selected it as an MPR node. OLSR uses topology control (TC) messages along with MPR forwarding to disseminate neighbor information throughout the network. Host and network association (HNA) messages are used b y OLSR to disseminate network route advertisements in the same way TC messages advertise host routes.

6. PROPOSED SYSTEM

In the proposed system the new sampling technique is used to collect the samples. The dynamic network topology graph is proposed to analyze the location of the vehicle nodes. The P- FTP (Parallelized file transfer protocol) is proposed to share the files from server to vehicles Data is processed using genetic algorithm. Content downloading in vehicular networks, focuses on the access to web search and presents a system that makes such a service highly efficient b y exploiting pre fetching. The proposed optimization problem,



aims at maximizing a metric reflecting the amount of vehicular traffic that enables V2V communication, and not the actual throughput.

7. GENETIC ALGORITHM

Genetic Algorithms (GA) are direct, parallel, stochastic method for global search and optimization, which imitates the evolution of the living beings, described b y Charles Darwin. GAare part of the group of Evolutionary Algorithms (EA). The evolutionary algorithms use the three main principles of the natural evolution: reproduction, natural selection and diversity of the species, maintained b y the differences of each generation with the previous. The selection principle is applied b y using a criterion, giving an evaluation for the individual with respect to the desired solution. The best-suited individuals create the next generation. The large variety of problems in the engineering sphere, as well as in other fields, requires the usage of algorithms from different type, with different characteristics and settings.

In the nature, the selection of individuals is performed by survival of the fittest. The more one individual is adapted to the environment - the bigger are its chances to survive and create an offspring and thus transfer its genes to the next population. In EA the selection of the best individuals is based on an evaluation of fitness function or fitness functions. Examples for such fitness function are the sum of the square error between the wanted system response and the real one; the distance of the poles of the closed-loop system to the desired poles, etc. If the optimization problem is a minimization one, than individuals with small value of the fitness function will have bigger chances for recombination and respectively for generating offspring.

The Genetic Algorithms are direct, stochastic method for optimization. Since they use populations with allowed solutions (individuals), they count in the group of parallel algorithms. Due to the stochastic was of searching, in most cases, it is necessary to set limits at least for the values of the optimized parameters. Although that the standard algorithms for genetic optimization are designed for multi parameter (design variables) optimization, there are modifications allowing single parameter optimization.

Such possibility exists in the offered here toolbox as well. Every gene, representing a real valued variable is divided into sub-genes, coding different powers of 10. Every sub-gene is modified independently from the others.

8. DYNAMIC NETWORK TOPOLOGY GRAPH

To model all possible opportunities through which data can flow from the Ap's to the downloaders, possibly via relays. The time instant at which the link between the two nodes is established or the quality level of an already established link takes on a new value. Each vehicle participating in the network communicated with in the frame to provide to provide static link.

File Transfer Protocol

FTP is the easiest way to transfer files between computers via the internet, and utilizes TCP, transmission control protocol, and IP, internet protocol, systems to perform uploading and downloading tasks. TCP and IP are the two major protocols that keep the internet running smoothly. TCP manages data transfer while IP directs traffic to internet addresses. FTP is an underling of TCP and shuttles files back and forth between FTP server and FTP client. Because FTP requires that two ports be open--the server's and the client's--it facilitates the exchange of large files of information.

Three modes of transferring data are available via FTP. The system can use a stream mode, in which it transfers files as a continuous stream from port to port with no intervention or processing of information into different formats. For example, in a transfer of data between two computers with identical operating systems, FTP does not need to modify the files. In block mode, FTP divides the data to be transferred into blocks of information, each with a header, byte count, and data field. In the third mode of transfer, the compressed mode, FTP compresses the files by encoding them. Often these modifications of data are necessary for successful transfer because the file sender and file receiver do not have compatible data storage systems.

9. CONCLUSION

In this paper we have presented an aggregation scheme for travel time data in road networks. In order to disseminate information within a large network, aggregation is done by means of a multilayer hierarchy of approximations of the road network. A genetic algorithm distributes information about the travel times between prominent points of the road network in order to build an abstract view of more distant regions. File transfer protocol divides the data to be transferred into blocks of information, each with a header, byte count, and data field is proposed in this aggregation scheme, it then becomes possible to tackle a second big issue in a VANET-based traffic information system.

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