ISSN(Online): 2320-9801
ISSN (Print): 2320-9798

International Journal of Innovative Research in Computer and Communication Engineering

(An ISO 3297: 2007 Certified Organization) Vol.2, Special Issue 1, March 2014

Proceedings of International Conference On Global Innovations In Computing Technology (ICGICT'14)

Organized by

Department of CSE, JayShriram Group of Institutions, Tirupur, Tamilnadu, India on 6th & 7th March 2014

Optimization of Content Downloading Using Dynamic Cache Memory

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ABSTRACT: Cloud applications that offer data management services are emerging in vehicular networks. Such clouds support caching of data in order to provide quality query services in vehicles. The connection to cloud server is automatically transferred to the next connection point in the vehicle travels. The users can query the cloud data, paying the price for the infrastructure they use. Cloud management necessitates an economy that manages the service of multiple users in an efficient, but also, resource economic way that allows for cloud profit. Naturally, the maximization of cloud profit given some guarantees for user satisfaction presumes an appropriate price-demand model that enables optimal pricing of query services. The model should be plausible in that it reflects the correlation of cache structures involved in the queries.

Optimal pricing is achieved based on a dynamic pricing scheme that adapts to time changes. It proposes a novel price-demand model designed for a cloud cache and a dynamic pricing scheme for queries executed in the cloud cache. The pricing solution employs a novel method that estimates the correlations of the cache services in an time-efficient manner. The experimental study shows the efficiency of the solution.

KEYWORDS—Vehicular networks, downloading, optimization, Ant colony optimization algorithm

I. INTRODUCTION

Vehicular networks are hybrid networks, it combine V2I (Vehicle-to-Infrastructure) and V2V(Vehicle-to-Vehicle) communications. The presence of high-end Internet-connected navigation and infotainment systems is becoming a reality that will easily lead to a dramatic growth in bandwidth demand by in vehicle mobile users. The vehicle mobile users are moving from different positions. The download positions should provide the facility to connect to the server continuously. Examples of applications of vehicular communication abound, and range from the updating of road maps to the retrieval of nearby points of interest, from the instant learning of traffic conditions to the download of touristic information and media-rich data files. This will induce vehicular users to resort to resource-intensive applications, to the same extent as today's cellular customers. Most observers concur that neither the current nor the upcoming cellular technologies will suffice in the face of such a surge in the utilization of resource-demanding applications

This paper relates to infrastructure deployment and content delivery in mobile environments, as well as to delay tolerant networks. Below, we review the studies that are most relevant to ours, highlighting the novelty of our approach. Our study also relates to cooperative downloading in vehicular networks. In this context, the work in, introduces a vehicular peer-to-peer file sharing protocol, which allows vehicles to share a content of common interest. Our study on content download, instead, works in the more generic case where each user is interested in a different behind the works in about which, as a consequence, the same considerations hold.

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To design a network architecture that will scale to support the mass of vehicular users , one possibility is to offload part of the traffic to Dedicated Short-Range Communication (DSRC), through the direct Infrastructure-to-vehicle(I2V) transfer, as well as Vehicle-to-Vehicle(V2V) data relaying. Such an approach is especially attractive in the case of download of large amounts of delay-tolerant data, a task that is likely to choke 3G/4G operator networks, but that will fits DSRC-based I2V and V2V communication paradigms due to its lack of strict time constraints.

We assume ideal conditions from a system engineering viewpoint, e., the availability of preemptive knowledge of vehicular trajectories and perfect scheduling of data transmission, and we cast the downloading process to a mixed integer liner programming (MILP) max-flow problem. The solution of such a problem yields the optimal AP deployment over a given road layout, and the optimal combination of any possible I2V and V2V data transfer paradigm. It represents the theoretical upper bound to the downloading throughput, under the aforementioned assumptions.

A new type of algorithm called ***ant algorithms*** (or ant systems). Ant systems are a population based approach. In this respect it is similar to genetic algorithms there is a population of ants, with each ant finding a solution and then communicating with the other ants. Like that it is used in vehicular networks that take advantage of information such as position of vehicles and speed. Implementation of ant algorithms in some networks that performs dynamically. Cloud computing can be a method of storing information. Instead of storing information on a local machine or network (e.g. on hard drive) cloud computing lets you store your information (or data) remotely, on servers that might be in another building, city or even country. Data or services in the cloud are only accessible via an internet connection. This means, thinking about using a cloud service you will need a fast, reliable internet connection. Also need to think about additional costs for increased data uploads and downloads.

II. RELATED WORK

Our work relates to infrastructure deployment and content delivery in mobile environments, as well as to delay tolerant networks (DTNs).

Collaborative Wi-Fi-based mobile data offloading architecture - Metropolitan Advanced Delivery Network (MADNet), it improving the energy efficiency for smartphones. Moving smartphones Wi-Fi based data offloading is challenging one due to the limitations of Wi-Fi antennas.

To extend the service range of roadside APs using relay-based solution. The signal quality of APs is poor when a vehicle moves towards the AP. That time to using the relay-based solution, it will provide good signal quality to relay the data. In a large scale data set measurement analysis of network resource usage and subscriber behavior can be collected inside 3G cellular data network. It analyzes behavior of an individual subscriber and significant variation in a network usage among the subscribers. It also analyze the different subscribers are hoe efficiently they can use the radio resources and network traffic from the point of view of the base stations.

MobTorrent is on demand , user driven framework designed for an vehicles having high speed access to the roadside Wi-Fi APs. WWAN is used by the mobile nodes in an MobTorrent. Mobile client wants to initiate a download, instead of waiting for contact with the AP, it informs one (or multiple) selected AP(s) to prefetch the content. The scheduling algorithm in MobTorret replicates the prefetched data on the mobile helpers so that the total amount of data transferred and the average transfer rate to the mobile clients are maximized.
The Drive-thru-internet access is based on Aps transmission characteristics for sending and receiving high data volumes using UDP and TCP in vehicles moving at different speeds.

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Content downloading and dissemination. Content downloading in vehicular networks, focuses on the access to the web search and present a system that makes such a service highly efficient by prefetching. Experimental and analytical results show the contribution of V2V and I2V communications to the system performance.

System study

In vehicular networks vehicles can communicate with each other with the help of internet access. Position of nodes made by protocols, algorithms and applications. GPS receiver installation is already comes with this technology, but in the VANets the advance technology is the critical areas and more dependent localization system, GPS starting to show some undesired problems such as not always being available or not being robust enough for an some applications. For this reason, some localization techniques can be used in VANets to avoid limitations of GPS such as Dead Reckoning, cellular Localization, and Image/Video Localization.

DTNs, consider the vehicle cooperation that is relates to our work to DTNs To enhancing the mobile network with infrastructure it assesses the benefit to content dissemination of adding varying numbers of base stations, mesh nodes and relay nodes to a DTNs. In our study time-extended graph is used it is similar to the DTNs time-invariant graph. Do not assume the contacts between the mobile nodes.

III. NETWORK SYSTEM AND GOALS

Downloaders can either exploit direct connectivity with the APs, if available, or be assisted by other vehicles acting as intermediate relays. we consider the following data transfer paradigms:

Direct transfers resulting from a direct communication between AP and a downloader. This represents the typical way mobile users interact with the infrastructure in today's wireless networks.

Connected forwarding, ie., traffic relaying through one or more vehicles that create a multiple path between an AP and a downloader, where all the links of the connected path exists at the time of the transfer. This is the traditional approach to traffic delivery in ad hoc networks.

Carry-and-forward, i.e., traffic relaying through one or more vehicles that store and carry the data, delivering them either to the target downloader or to another relay to meet such downloader soon.

We stress that connected forwarding and carry-and-forward are inherently multiple paradigms. We assume that vehicular users are rational; hence they can be engaged in relaying traffic for others only if they are not currently retrieving the content of themselves. Because of our goal is to derive an upper bound to the system performance, we assume the availability of preemptive knowledge of vehicular trajectories and perfect scheduling of data transmission.

Existing clouds focus on the provision of web services targeted to developers, such as Amazon Elastic Compute Cloud (EC2), or the deployment of servers, such as Go Grid. There are two major challenges when trying to define an optimal pricing scheme for the cloud caching service. These services don't provide optimal solution to the members. This system provides lot of stress to server when the number of member exceeds the limit.

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Proposed System

The cloud caching service can maximize its profit using an optimal pricing scheme. Optimal pricing necessitates an appropriately simplified price-demand model stops the repeatability of data download from the server. Members cache details are upload to server for system when they want to format the computer. The details from the server can be reconfigured when the client want to restore the cache details from the server.

IV. DYNAMIC NETWORK TOPOLOGY GRAPH (DNTG)

The main aim of an DNTG is show all possibilities for which the data can be flow from the APs to downloaders. Mobility trace can identify the contact events between pair of any nodes. Each contact event is characterized by

Link quality metric the data rate achieve at the network layer.
The new value taken by contact starting time or establishing between two nodes.
The contact ending time or link removed or quality level has changed.

The time interval between any two successive contact events in the network is called Frame. Within the frame the network is static, i.e., there is no link creates or remove and the link quality do not change. We denoted by F the number of frames in the considered trace, and by rk the duration of the generic frame k(1<=k<=f); also, all ongoing contact events during frame k are said to be an Active in that frame.

V. IMPACT OF MAC AND PHYSICAL LAYER MODELING

Our goal is to derive the upper bound to the performance achievable in real world deployment. MAC and Physical layer idealization contributes to shift the upper bound away from the actual performance.

The same reference scenario, road topology, and vehicular mobility can used an urban environment with non-overlapping AP coverage's and the data transfer is limited to 2 hops.

Under these conditions we assess the impact of our simplifying assumptions on the MAC and Physical layers. At the physical layer the bit error rate accounting for the SINR and the signal modulation.

VI. PREFERENCE SCENARIO

We consider real-world road topologies representing different environments, namely the urban area of Zurich, the village area of Schlieren, and the suburban area of Wallisellen, in Switzerland. The vehicular mobility in the region has been synthetically generated at ETH Zurich. he macroscopic- and microscopic-level models employed to produce the movement traces allow a realistic representation of the vehicular mobility, in terms of both large-scale traffic flows and small-scale V2V interactions.

VI. CONCLUSION

In this paper we uploading and downloading the content in a vehicular network is done in effective manner using ant colony optimization algorithms.

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VII. FUTURE WORK

We have an idea to downloading the files from cloud packet by packet

REFERENCES

[1] B.S. Arnaud "iPhone slowing down the Internet – Desperate need for 5G R&E networks" http://billstarnaud.blogspot.com/2010/04/iphone-slowing-down-internet desperate.html.May 2010.

[2] V. Bychkovsky, B. Hull, A. K. Miu, H. Balakrishnan and S. Madden "A measurement study of vehicular Internet access using in situ Wi-Fi Networks" *ACM MobiCom,* Los Angeles, CA, Sept. 2006.

[3] B. B. Chen, M. C. Chan "MobTorrent: A framework for mobile Internet access from vehicles" *IEEE INFOCOM,* Rio de Janeiro, Brasil, Apr. 2009.

[4] By M. Fiore, J. M. Barcelo-Ordinas "Cooperative download in urban vehicular networks" *IEEE MASS*, Macau, China, Oct. 2009.

[5] D. Hadaller, S. Keshav, T. Brecht, S. Agarwal "Vehicular opportunistic communication under the microscope" *ACM MobySys,* San Juan, Puerto Rico, June 2007.

[6] J. Ott, D. Kutscher "Drive-thru Internet: Automobile users" *IEEE INFOCOM,* Hong Kong, China, Mar. 2004.

[7] U. Paul, A.P. Subramanian, M.M. Buddhikot, S.R. Das "Understanding traffic dynamics in cellular data networks " *IEEE INFOCOM,* Shanghai,China, Apr. 2011.

[8] J. Zhao, T. Arnold, Y. Zhang, G. Cao "Extending drive-thru data access by vehicle-to-vehicle relay" *ACM VANET,* San Francisco, CA, Sept. 2008.

[9] Z. Zheng, P. Sinha, S. Kumar "Alpha coverage: bounding the interconnection gap for vehicular Internet access" *IEEE INFOCOM*, Rio de Janeiro, Brazil, Apr. 2009.

[10] Z. Zheng, Z. Lu, P. Sinha, S. Kumar "Maximizing the contact opportunity for vehicular Internet access**"** *IEEE INFOCOM,* San Diego, CA, Mar. 2010.