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# Improving Data Access Efficiency in Social Wireless Network with Cooperative Caching

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**ABSTRACT:** Caching is a key technique for improving the data retrieval performance of mobile clients in mobile environments. The emergence of robust and reliable technologies now brings to reality what we call "cooperative caching" in which mobile clients can access data items from the cache in their neighbouring peers. We discuss cooperative caching in mobile environments and propose a cooperative caching scheme for mobile systems. With our model, we extend beyond these populations to project cooperative caching behaviour in regions with millions of clients. Overall, we demonstrate that cooperative caching has performance benefits only within limited population bounds. Then optimal cooperative caching policy for minimizing electronic content provisioning cost in Social Wireless Networks (SWNETs). To reduce user-perceived latency in retrieving documents on the World Wide Web, a commonly used technique is caching both at the client's browser and more gainfully (due to sharing) at a proxy. The effectiveness of Web caching hinges on the replacement policy that determines the relative value of caching different objects. An important component of such policy is to predict next-request times. Using various Web server logs, we compared existing cache replacement policies with our server-assisted schemes. The first issue is whether Web requests from a fixed user community are distributed. It relates to a number of studies on the characteristics of Web proxy traces, which have shown that the hit-ratios and temporal locality of the traces exhibit certain asymptotic properties that are uniform across the different sets of the traces. We find that the model yields asymptotic behavior that are consistent with the experimental observations, suggesting that the various observed properties of hit-ratios and temporal locality are indeed inherent to Web accesses observed. Finally, we revisit Web cache replacement and show that the algorithm that is suggested by this simple model performs best on real trace data.

## I. INTRODUCTION

### 1.1 INTRODUCTION TO PROJECT

Recent emergence of data enabled mobile devices and wireless-enabled data applications have fostered new content dissemination models in today's mobile ecosystem. A list of such devices includes Apple's iPhone, Google's Android, Amazon's Kindle, and electronic book readers from other vendors. The array of data applications includes electronic book and magazine readers and mobile phone Apps. The level of proliferation of mobile applications is indicated by the example fact that as of October 2010, Apple's App Store offered over 100,000 apps that are downloadable by the smart phone users. With the conventional download model, a user downloads contents directly from a Content Provider's (CP) server over a Communication Service Provider's (CSP) network. Downloading content through CSP's network involves a cost which must be paid either by end users or by the content provider. In this work, we adopt Amazon Kindle electronic book delivery business model in which the CP (Amazon), pays to Sprint, the CSP, for the cost of network usage due to downloaded e-books by Kindle users. When users carrying mobile devices physically gather in settings such as University campus, work place, Mall, Airport and other public places, Social Wireless Networks (SWNETs) can be formed using ad hoc wireless connections between the devices. The motivation of Amazon's Kindle electronic book delivery business develops practical network, service, and pricing models. It used for creating two object caching strategies for minimizing content provisioning costs in networks with homogenous and heterogeneous

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object demand. Caching is a key technique for improving the data retrieval performance of mobile clients in mobile environments.

## II. PROPOSED SYSTEM

Drawing motivation from Amazon's Kindle electronic book delivery business develops practical network, service, and pricing models which are then used for creating two object caching strategies for minimizing content provisioning costs in networks with homogenous and heterogeneous object demands [1]. It constructs analytical and simulation models for analyzing the proposed caching strategies in the presence of selfish users that deviate from network-wide cost-optimal policies. Based on a practical service and pricing case, a stochastic model for the content provider's cost computation is developed [2].

A cooperative caching strategy, Split Cache, is proposed, numerically analyzed, and theoretically proven to provide optimal object placement for networks with homogenous content demands [3-4]. A benefit-based strategy, Distributed Benefit, is proposed to minimize the provisioning cost in heterogeneous networks consisting of nodes with different content request rates and patterns. It also reports results from an Android phone based prototype SNET, validating the presented analytical and simulation results

## III. SYSTEM ARCHITECTURE

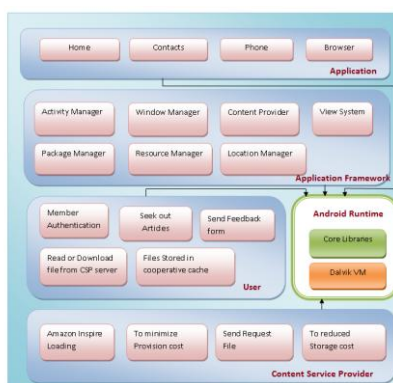


Fig. 3.1 System Architecture

## IV. SYSTEM IMPLEMENTATION

The administrative user interface concentrates on the consistent information that is practically, part of the organizational activities and which needs proper authentication for the data collection [5]. The Interface helps the administration with all the transactional states like data insertion, data deletion, and data updating along with executive data search capabilities. The operational and generic user interface helps the users upon the system in transactions through the existing data and required services. The operational user interface also helps the ordinary users in managing their own information helps the ordinary users in managing their own information in a customized manner as per the assisted flexibilities [6-7].

## V. MODULE DESCRIPTION

After careful analysis the system has been identified to have the following modules:

- Android Security.
- Content Policy.
- Member Authentication.



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d. Obliging Cache.

## *a- ANDROID SECURITY*

Android protect application at system level and at the Inter-component communication (ICC) level. This article focuses on the ICC level enforcement. Each application runs as a unique user identity, which lets Android limit the potential damage of programming flaws [8]. And also allow accesses to core mobile device as well as all application are equal with fast and equal. It surely takes lot of time for other operation system to create such a rapid revolution, then Android has security features built into the operating system that significantly reduce the frequency and impact of application security issues [9].

## *b CONTENT POLICY*

Core idea of Android security enforcement labels assignment to applications and component. A reference monitor provides mandatory access control (MAC) enforcement of how applications access components [10]. Access to each component is restricted by assigning it an access permission label. Applications are assigned collections of permission labels. When a component initiates ICC, the reference monitor looks at the permission labels assigned to its containing application and if the target component's access permission label is in that collection— allows ICC establishment to proceed [11].

## *c MEMBER AUTHENTICATION*

The User details are stored in cloud database. And that data accessed by all the other types of users. Cloud AS (Authentication server) is a strong authentication virtual appliance offered on the Amazon Cloud [12]. It supports a variety of hardware and software tokens that can be used to authenticate their log-in to Virtual Private Networks (VPN), Outlook Web Access (OWA), and etc. But only they can access the necessary information based on their user type. So user details are stored in secure manner. Member authentication fully based on privacy preservation. Data storage privacy also maintained by member authentication.

## *d. OBLIGING CACHE*

In cooperative caching, it extends beyond these populations to cooperative caching behaviour in regions with millions of clients. Overall, we demonstrate that cooperative caching has performance benefits only within limited population bounds [13]. To reduce user-perceived latency in retrieving documents on the World Wide Web, a commonly used technique is caching both at the client's browser and more gainfully (due to sharing) at a proxy. This mechanism is termed as cooperative caching. In order to encourage the End-Consumers (EC) to cache previously downloaded content and to share it with other end-consumers, a peer-to-peer rebate mechanism is proposed.

## VI. SEEK OUT ARTICLES

The user request the data to server, at that time once the user selects a file or book the browser asks the server, and click download. The server starts the reception and continuously downloads with the process information. When you download something from the server, you can keep an eye on its download progress in the download bar at the bottom of your tab. When the file is done downloading, just click its button to open it. All the files you've ever downloaded are listed on the folder. The above data's are stored in cloud database.

## VII. CONCLUSION

The popularity of mobile applications is steadily increasing. The emergence of robust and reliable technologies now brings to reality that call "cooperative caching" in which mobile clients can access data items from the cache in their neighbouring peers. Cooperative caching in mobile environments and propose a cooperative caching scheme for mobile systems. It extends beyond these populations to distributed cooperative caching behaviour in regions with millions of clients. Overall, system demonstrates that cooperative caching has performance benefits only within limited population bounds. The main purpose of this SWNET to Minimizing electronic content provisioning cost in social wireless networks by using cooperative caching is done. And it constructs analytical models for analysing the proposed caching strategies in the presence of selfish users that deviate from network-wide cost optimal policies.



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## FUTURE ENHANCEMENT

To study several issues in the future, consider how to determine the optimal number of replicas for each data item. This problem is intuitively related to the following four factors: First data access pattern, Second work data size, Third work node mobility pattern, and then finally storage limitation. Also, it deals with new challenges of considering multiple data items: first one intuitively, the priority of a data item is determined by its popularity and redundancy in the community. The popular but scarce data items deserve high priority. Second one simple solution is to let the high centrality nodes transfer some data items with low priority to the node with lower centrality to make room for the data items with high priority.

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