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EVALUATION OF AN INFORMATION SHARING SYSTEM FOR HUMANIZED NETWORKS

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Abstract— The Mobile Technology is necessity of every customer because of wireless communications easily done in different portable devices. These portable devices relay on the wireless infrastructure to access the web services provided by the central application providers. This entity service is a not be properly suitable for inter device communication.

This paper introduce the Humanized networks (HZNET) where a network architecture to direct communicate with the inter device communication. In this network the architecture is to represent a content based publish-subscribe system, called a (B-SUB) bloom filter based pub-SUB system, for the networks formed by human carried wireless devices which refers as human networks.

Index Terms: Networks, HZNET, B-SUB, TCBF, Information sharing system

1. INTRODUCTION

The fast growing of necessity of mobile devices for users in their life when the growing of mobile users the technology is also developed because technology improvement of the network terminal had changed first comes with CDMA/CSMA signals and then 2G, 3G, 4G networks are developed for the portable mobile users. the use of the web service information from central application providers we introduce the B-SUB architecture by using this when user wants when users wants to communicate the different portable devices through central servers first it will translated to inert device communicators and then sends to the receiver mobile device .The B-SUB referred as the bloom filter it has human readable text by this architecture the complete transaction won't be done because of some security reasons and the content will be lost for this we introduce the new architecture DTN. In this paper we study the use of a semantically rich storage model in order to fulfill the data transmission requirements of challenged networking environments, which are characterized by long delays and frequent communication disruptions. Practical experience shows us that the highly success-full data abstractions of mainstream storage systems (e.g. monolithic file representation) operate poorly in emergent networking environments such as "**Delay Tolerant Networks (DTNs)**" short contact times do not allow for complete filer bundle transmissions. We have ported and integrated two systems in order to provide a solution that overcomes many of the data transmission challenges of DTNs: a semantically rich storage system (Datum) and a network framework capable of exploiting this augmented expressive power. Our solution, Bedouin, enables both systems to run on resource-constrained devices. It facilitates meaningful data exchanges in challenged networks supporting the principle of infrastructure-independent networking, and exploiting human mobility and opportunistic connectivity. The design function of a proof-of-concept Bedouin-based peer-to-peer file sharing application for human networks, called Car-van, is included that our solution enables applications to work correctly in spite of intermittent data exchanges and disruptions while max-missing the amount of useful data delivered to applications. The bloom filter which is designated to describe human

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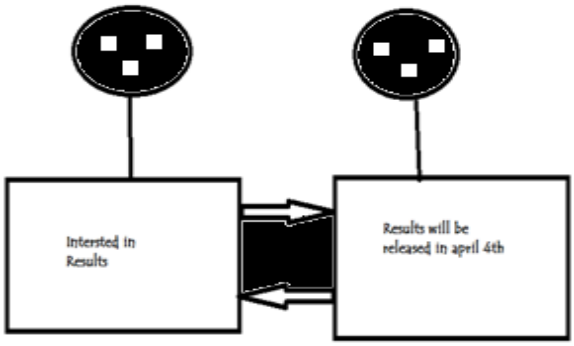
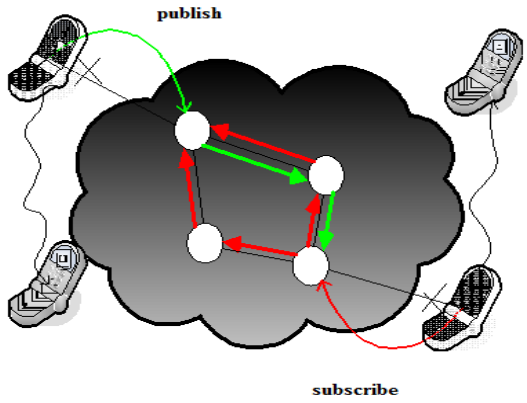
readable strings to forward this type of contents by using a novel structure called as TCBF (Temporal Counting bloom filter) that is it describes enclosing tags to the content defined by the B-SUB. Comprehensive theoretical analyses on the parameter tuning of B-SUB are presented and verify B-SUB's ability to work efficiently under various network conditions.





II. PROPOSED SYSTEM

In proposed system we design the HZNET with B-SUB, TCBF novel architectures.

- We propose HZNET, a novel network architecture that facilitates efficient information sharing between portable mobile devices. We design B-SUB, an interest-driven information sharing system for HZNETs, a content-based publish/subscribe that achieves infrastructure-less communication between mobile devices.
- We invent the TCBF, an extension to the counting Bloom filter.
- We conduct extensive theoretical analyses and real world trace driven simulations to evaluate the performance of B-SUB.

Advantages:

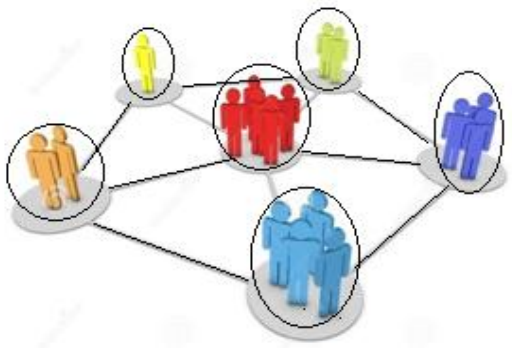
- This provides stronger privacy guarantee.
- Gives better protect user privacy.

III. HZNET ARCHITECTURE

Humanized network is a secret organization that links some people to share secrets and give to these people a competitive advantage. This organization is frequently so secret that its members would sincerely reject the idea that they belong to a network. New members of a network are chosen by the network incumbents.

The existence of a network is often more obvious for outsiders who suffer from the consequences of not belonging to the network. Network perception Network perception is an issue of its own. A network is everything but palpable. A pure network is a loose organization without any member list and statute.

Network members do not meet in catacombs. They use phone and (cautiously) e-mail. It is possible though not easy to demonstrate the existence of a network using the fact that networks carry information: if you enter a piece of information on one side it will spread to the rest of the network. You may be witness of network actions but never when you are the victim of these actions. Because a network is not palpable you may imagine that you did not get a promotion or suffered because that served a network purpose even when no network was involved. When a network is actually involved you may feel that the situations hopeless. This is not completely true. First a network is anarchism unable to grasp a technical issue - regardless of the technique - and we live in a world where technical knowledge is increasingly important. Second while it is powerful as an offensive weapon a network is worthless as a defensive weapon. When it is attacked a pure network vanishes.



IV. B-SUB

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HZNETs ☺(Humanized networks)
A network formed by human-carried devices

- Users exchange interested messages upon contacts
- Messages are short

B-SUB has two components: content representation and pub/sub routing. B-SUB employs the tag-based content description model. The contents of messages and the interests of users are identified by tags, which are strings that summarize the topics of the message. They are stored in TCBFs, which are then used as probabilistic hints for forwarding messages. The pub/sub routing provisions two functions: interest propagation and message forwarding. Both rely on the TCBF to achieve low storage and computational complexities. B-Sublimit the size of messages to a few more than 100 bytes. Large volume content distribution is surly desirable, but is difficult to provision given the existing infrastructure. It is also true in existing social networking applications that users tend to publish many small-sized messages.

V. PUB-SUB SYSTEM

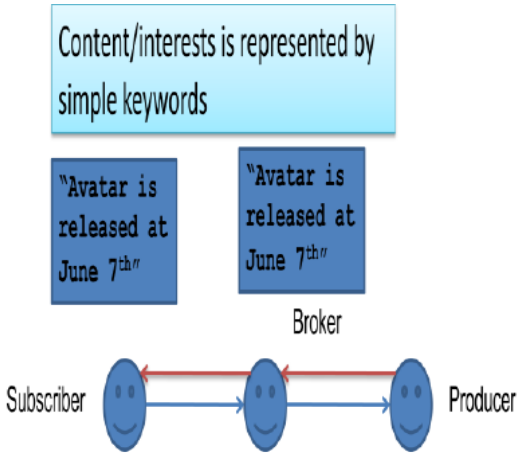

Fig: Pub-Sub System for HUNET

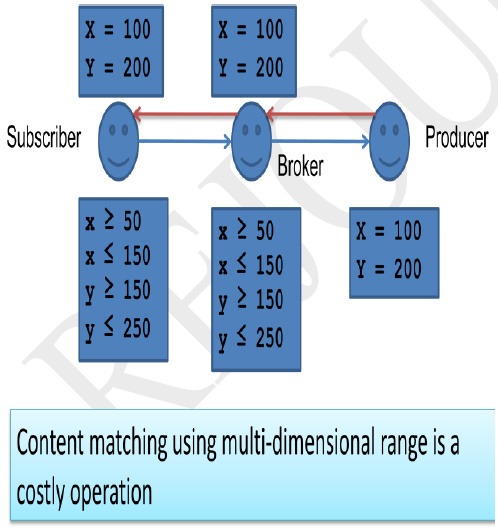

Fig: Pub-sub system

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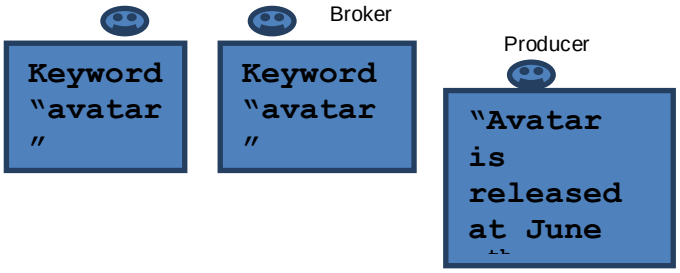
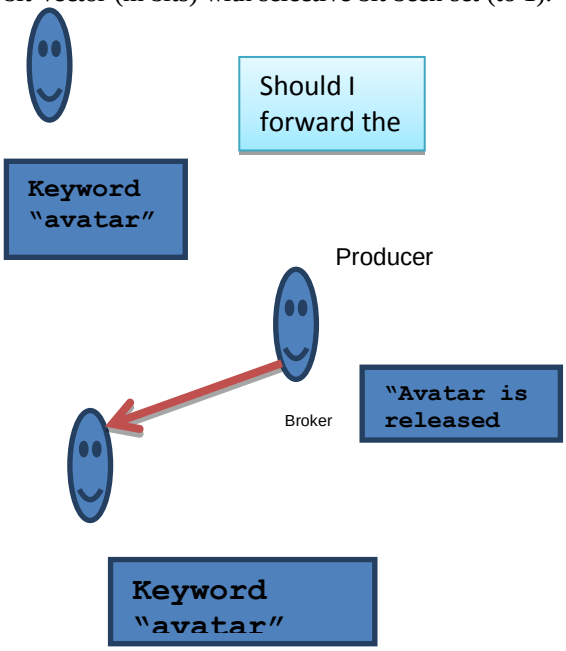
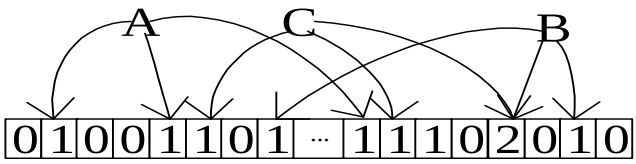
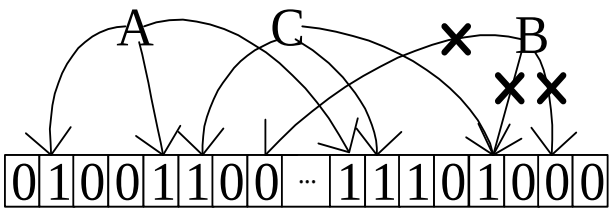


VI.BROKER ALLOCATION

Brokers cannot be too much or too few Too many brokers pose excessive overhead Two few brokers causes performance problem Brokers cannot be too much or too few Too many brokers pose excessive overhead Two few brokers causes performance problem Distributed election Each user monitors the number of brokers it met Neither too many nor too few A bit-vector (m bits) with selective bit been set (to 1).







An empty filter is a bit-vector with all bits unset insertion of an element Bloom filter does not support removal of element sunset the set bits of an element may result in falsely removing another elements CBF solves this problem by replacing each bit by a counter-A unset bit is a counter of value "0"Increment the counter when insert an element Decrement the counter to remove an element.

VI. TCBF

The TCBF is an extension of the counting Bloom filter. Similar to a counting Bloom filter, a TCBF also uses a vector of counters. Insertion of the TCBF increments the associated counters of the inserted key by a fixed value II, called the initial counter value (ICV), instead of 1 in the counting Bloom filter. Each time a key is inserted into a TCBF, the counters associated with the key's hashed bits will be set to the ICV. If the counter has already been set by some other keys, we do not change its value. In other words, the results of insertions are always a TCBF with multiple counters of the same value of II.There are two ways of merging multiple TCBFs: the additive merging or A-merge and the maximum merging or M-merge.

We propose the concept of TCBF

- The counter is incremented by "N" when insert a new element
- Decaying: counters' values decrease with time

TCBF's operations

- **Insertion:** Increment the corresponding bits' counters
- **Additive merge:** A-merge
- **Maximal merge:** M-merge
- **Deletion:** decaying remove inactive interests with time
- **Existential query:** same as normal BFs

Interest's propagation

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Additive merge between brokers produces bogus tickets. This will result in wrong decision in forwarding.

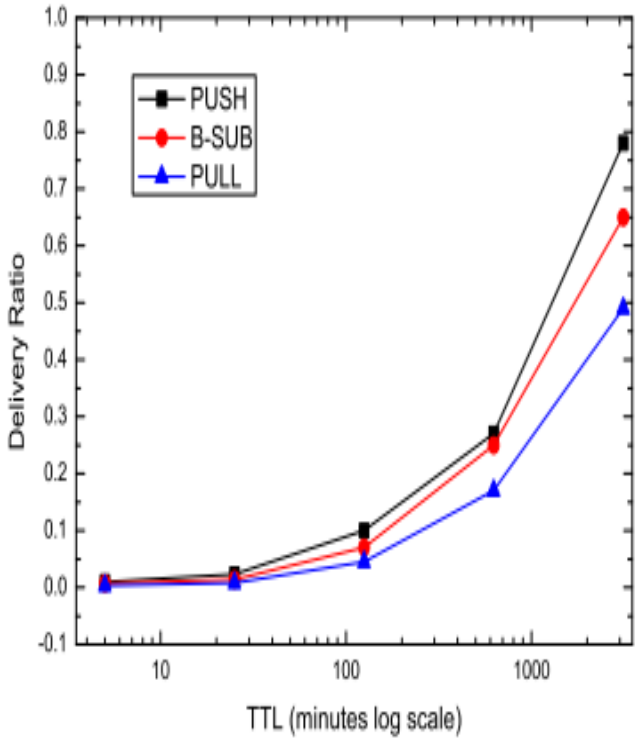
- Forwarding is executed after collecting or exchanging BFs
  - And before merging
- Perform existential query against genuine filter
  - Decide if the user is interested in any messages
- Perform preferential query to secondary filter
  - Forward if the neighbor has a positive value
  - An extension is to set a threshold For a key k and two filters F_i and F_j, we get the counters of k's associated bits in F_i and F_j
  - Then, we get the minimum value of the two sets of counters
  - Denoted as c_i and c_j
  - We define the preference of F_j to F_i against k, $PREF_{i,j}(k)$

System Analysis:

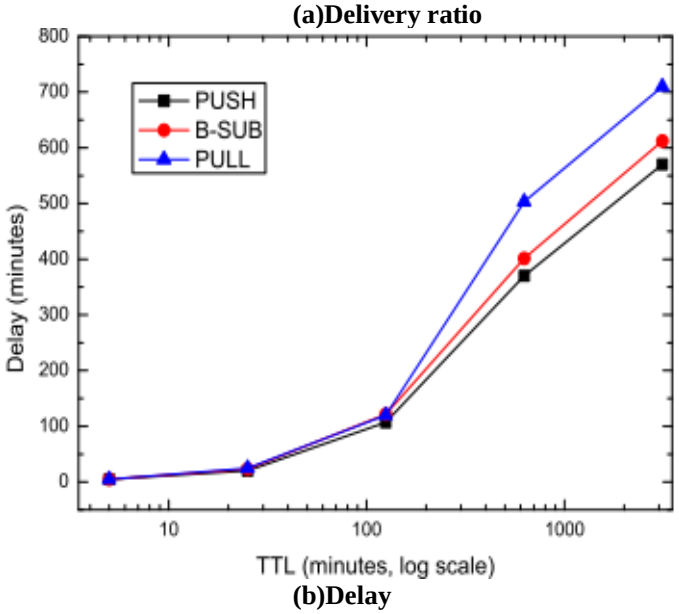
The DF is the key to adjusting B-SUB's behaviors. We study its impacts on the interest propagation and the FPR. We also analyze the storage complexity of TCBFs and present a TCBF allocation method with the optimal FPR. The details of the analyses are moved to the available online supplemental material. Please refer to the journal's website for accessing the digital copy.

$$PREF_{i,j}\{k\} = \begin{cases} \frac{c_j - c_i}{c_i} & \text{if } c_i \neq 0 \\ c_j & \text{if } c_i = 0 \end{cases}$$

VII. RESULT ANALYSIS



(a)Delivery ratio



(b)Delay

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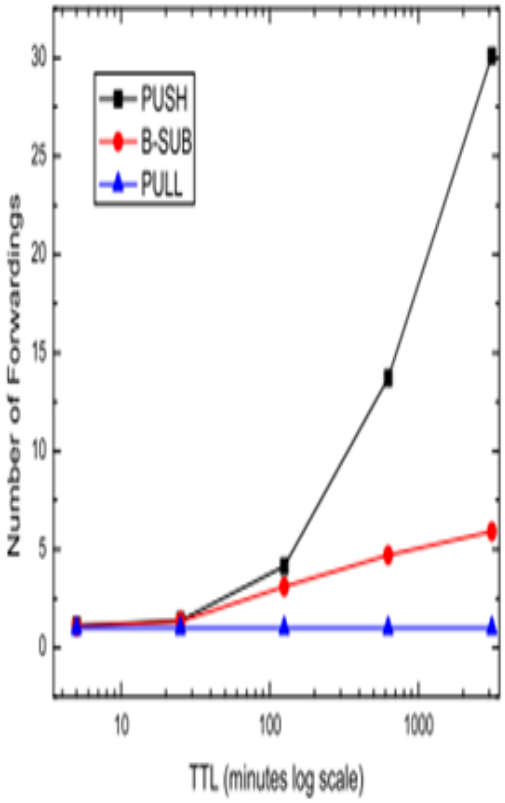
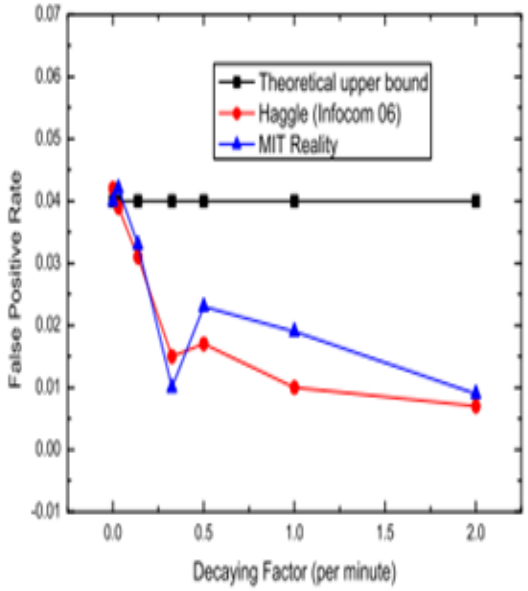


(c) Number of forwarding



(d) False positive

VIII. CONCLUSION

In HZNET we describes a pub-sub system based on Bloom filters is proposed where we developed a distributed algorithm to dynamically select brokers; a new data structure called TCBF is proposed to Compress subscriptions Support pub-sub routing.

IX.FUTURE ENHANCEMENT

In HZNET we describe more privileged works on mobile technology applications. Customizable security and privacy give up some privacy to gain better performance and user satisfaction. Infrastructure assisted communication system implementation and real-world deployment.

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