Reviewing the Problem for Presence Cloud Based Solution for on Demand Data in Wireless Computing Devices

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Abstract: Social network services are growing and many people are sharing digital resources in order to enhance, improve and facilitate collaborative work. It is essential because it maintains each mobile user's presence information such as current status (online/offline), GPS location and network address. If presence update occurs frequently, enamours number of messages distributed by server may lead to scalability problem. Most of the previous algorithms are used to address fixed searching problem in distributed system for different intention.In this paper the major idea was to propose an on demand QoS routing algorithm. Since the requirement are been changing from time to time due to the use of internet and the basic needs are been enhancing as the technology is growing and development is taking its way fast .Hence approach for services may not be so proactive the proposed approach has two phases namely route discovery phase and route maintenance phase. When data has to be passed to the destination node the Qos starts route discovery phase .And when the data transfer is been finished and route is found it require to maintain path to destination which is been done by route maintenance phase. This is very much required by the mobile services and the network such as ad-hoc.

Keywords: QoS;route discovery phase;route maintenance phase ;scalability

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I. Introduction

In Mobile vicinity administration is an essential part of an interpersonal organization applications because of portable client's vicinity subtle elements, for example, worldwide situating framework area, system address, and online/logged off status are consistently notify to client's online buddies.A versatile pervasiveness administrations is a critical component of distributed computing situations, for the reason it keeps an up - to-date rundown of vicinity data of versatile client. In the event that vicinity overhauls happen frequently the quantity of messages circulated by vicinity server might prompt adaptability issue and pal list look issue in extensive scale versatile vicinity administrations. To conquer the versatility issue proposed a productive and ascendable server structural engineering called vicinity cloud. It composes the vicinity server into majority based server-server structural engineering for proficient looking. At the point when a portable client joins a system or web, vicinity cloud seeks the vicinity data. It additionally accomplishes little consistent pursuit inertness by the coordinated hunt calculation and one-jump reserving strategy.The Presence entitled applications, for example, Face-book, Twitter and so forth., which is created by cell phones and distributed computing nature because of the pervasiveness of web .Way the individuals are locked in with their pals on web are changed by the informal organization administrations . Keeping in mind the end goal to connect with mates crosswise over incredible separation members can administer the live occasion promptly utilizing their cell phone. Versatile client's vicinity data points of interest will be kept up by portable vicinity administration . In distributed computing environment portable vicinity administration is an essential part of interpersonal organization application. In view of the universality of the Internet, cell phones and distributed computing situations can give vicinity empowered applications,i.e., informal organization applications/administrations, around the world. Face book, Twitter Foursquare Google Latitude, mate cloud and Mobile Instant Messaging (MIM) are samples of vicinity empowered applications that have become quickly in the most recent decade. Interpersonal organization administrations are changing the routes in which members draw in with their companions on the Internet. They abuse the data about the status of members including their appearances and exercises to communicate with their companions. Also, in light of the wide accessibility of cell phones (e.g., Smartphone's) that use remote portable system advances,interpersonal organization administrations empower members to share live encounters in a split second crosswise over incredible separations. Vicinity data educates the insight concerning versatile client's accessibility, action and machine limit. Administration does tying of client id to his/her present vicinity data points of interest. Every individual portable client has a pal rundown which incorporates subtle elements of whom he/she needs to cooperate with in informal community administrations. At the point when a client does shipment from one level to other, this change is instinctually transmitted to every person on the pal list. Server bunch innovation builds the inquiry speed and abatement the report time. For instance in informal organization application versatile client sign in through his/her cell phone, the portable vicinity administrations looks and uncovers each of them about client's companion rundown, for example, texting framework .Once way is set up, the versatile client demand for the companion rundown to the vicinity server which is available in vicinity cloud. Lastly the solicitation is reacted by the vicinity cloud in the wake of finishing an effective inquiry of amigo's vicinity data. Dissect the execution unpredictability of Presence Cloud and two different architectures, a Mesh based plan and a Distributed Hash Table (DHT)- based plan. Through reenactments, we likewise think about the execution of the three methodologies as far as the quantity of messages produced and the pursuit fulfillment which we use to indicate the hunt reaction time and the amigo warning time. The outcomes exhibit that Presence-Cloud accomplishes significant execution picks up regarding decreasing the quantity of messages without relinquishing seek fulfillment. Therefore, Presence Cloud can bolster a huge scale informal organization administration conveyed among a large number of servers on the web. Vicinity Cloud is among the spearheading building design for versatile vicinity administrations. To the best of our insight, this is the primary work that unequivocally plans a vicinity server structural planning that essentially beats those based appropriated hash tables

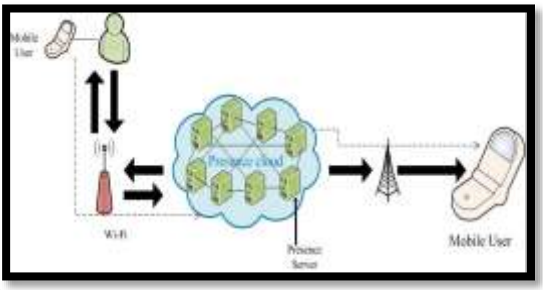

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Fig 1. Implementation Flowchart

II. Related Work

Instant messaging (IM) is a type of online chat which offers real-time text transmission over the Internet. Most popular network IM system: AOL Instant Messenger (AIM), Yahoo! Messenger (YMSG),and Microsoft Messenger(MSN).are discussed.

A. AOL Instant Messenger

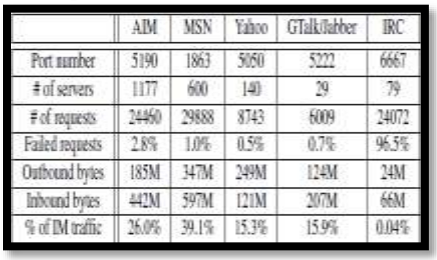
AIM defines different types of servers. Some of them are login, BOS icon, chat room setup, user search and chat room hosting. AIM uses client-server architecture for normal operations but uses a peer-to-peer approach for voice-chat sessions.

B. Yahoo! Messenger (YMSG)

YMSG takes the symmetric approach. YMSG also uses client-server architecture for normal operations as well as voice-chat service. YMSG voice traffic is routed by a centralized voice chat server. Clients need only one type of server and then route all kinds of activities though that particular server. While each has been designed and implemented separately, the total group exhibits same characteristics with respect to network and system architecture.

C. Microsoft Messenger (MSN)

MSN characterizes three sorts: dispatch, notice, and switch board. MSN additionally utilizes a customer server building design for typical operations and distributed for voice visit correspondence. Most IM frameworks have instruments for keeping up arrangements of companions. These are ordinarily called pal records, permit records, and square records. Most IM frameworks use brought together bunches to give vicinity administrations. Jennings et al. [5] displayed Taxonomy of various components and capacities upheld by these three IM frameworks. The creators additionally gave a diagram of the framework architectures and watched that the frameworks use customer server-based architectures. Each of the three business frameworks use server bunches for versatility. Point and MSN take the hilter kilter approach.MSN characterizes three sorts: dispatch, warning, and switchboard. Interestingly, YMSG takes the symmetric methodology. Customers require just get in touch with one sort of server and afterward course a wide range of exercises however that specific server. While each has been planned and executed independently, the general gathering shows comparative attributes regarding system and framework structural engineering. For instance, the majority of the IM conventions permit verifying with a focal server, taking part in private messages, and chatting in broad daylight talk rooms. Likewise, some IM frameworks permit document exchanges, Webcam use, utilizing protection controls, keeping up mate records, voice visit sessions, and different choices. Most IM frameworks, including the three use customer server building design. IM suppliers regularly have resource of servers that clients sign into and trade messages with. In customer server construction modeling, following both control and information ways experience the focal servers, scaling the administration to a great many clients is troublesome. The adaptability issue is especially troublesome for voice visit sessions.AIM utilizes customer server construction modeling for typical operations yet utilizes a distributed methodology for voice-talk sessions. YMSG additionally utilizes customer server construction modeling for ordinary operations and additionally voice-visit administration. YMSG voice activity is directed through a unified voice-visit server.MSN additionally utilizes a customer server building design for ordinary operations and distributed for voice – talk correspondence. Most IM frameworks have systems for keeping up arrangements of companion



	AIM	MSN	Yahoo	GTalk/Jabber	IRC
Port number	5190	1863	5050	5222	6667
# of servers	1177	600	140	29	79
# of requests	24460	29888	8743	6009	24072
Failed requests	2.8%	1.0%	0.5%	0.7%	96.5%
Outbound bytes	185M	347M	249M	124M	24M
Inbound bytes	442M	597M	121M	207M	66M
% of IM traffic	26.0%	39.1%	15.3%	15.9%	0.04%

Fig 2.Overview of IM traffic

These are commonly called "mate records," "permit records," and" blocklists."Recently, vicinity administrations are additionally incorporated into versatile administrations. For instance, 3GPP has characterized the coordination of vicinity administration into its determination in UMTS. It depends on SIP [8]protocol, and utilizes SIMPLE [8] to oversee vicinity data. As of late, some cell phones likewise bolster portable vicinity administrations. For instance, the Instant Messaging and Presence Services was created by the Wireless Village consortium and was united into Open Mobile Alliance (OMA)IMPS [10] in 2005. In [11], Chen et al. proposed a pitifully predictable plan to lessen the quantity of overhauling messages in portable vicinity administrations of IP Multimedia Subsystem (IMS). In [13], creators exhibited the server versatility and dispersed administration issues in IMS-based vicinity administration. As of late, the IETF has left on a push to institutionalize IM and talk conventions. Two contending principles are being created: one in view of SIMPLE [8] and a second one in light of XMPP [13].XMPP, the Extensible Messaging and Presence Protocol, is an another distinct option for SIMPLE. The fundamental linguistic structure and semantics of XMPP were produced initially inside of the Jabber open source group. It is expected for the most part with the end goal of building IM and vicinity applications. This IM convention is likewise the convention utilized as a part of the business execution of Google Talk and Facebook Chat. In the year October 2004, the XMPP working gathering at IETF distributed the records. Taste is a content – based control-plane convention for building up mixed media sessions, for example, Voice over IP.The Message Session Relay Protocol(MSRP) is a text transport convention characterized by the SIMPLE working gathering. It is a session-based convention Skype, a mainstream voice over IP application, uses the Global Index (GI) innovation [8] to give a vicinity administration to users.GI is a multitier system structural planning where every hub keeps up full learning of every single accessible client. All these IM administrations use focal server structural planning which prompts versatility issue at server side. So to address the issue, productive and adaptable server structural engineering, called Presence Cloud is proposed by Chi-Jen et la, [1].Presence Cloud composes vicinity servers into a majority based server –to-server building design for proficient vicinity looking. It additionally utilizes coordinated algorithm and a one-hop caching strategy to achieve small constant search latency. Overall, Presence Cloud is shown to be a scalable mobile presence service in large-scale social network services.

III. Analysis of Problem

Issue Statement: Here, really there are a few noteworthy issues are happened. In that chiefly focus on pal list look issue. This issue is happen when immense quantities of messages are happened persistently. By reason for this hunt issue, time for going of messages is moderate i.e., time is postponed to achieve specific message to the destination. The explanation behind happening this kind of issue is 'over-burden messages'. i.e., by reason for over-burden messages this pal list seek issue is happened. It is at times called as 'adaptability issue'. Seek expense is additionally called as 'correspondence expense'. At the point when a client arrives, the aggregate number of messages created by the vicinity server is only pursuit cost. Seek fulfillment is only, time it takes to look the client's arriving pal list. At the point when the amigo list seek issue is happened, at that circumstance there is an opportunity to defer the message passing. By this reason time is postponed. In the meantime, there is have to store that message briefly up to reach to destination. By this reason, here require additional space to store that message in brief memory. i.e., like store memory. This is additionally one of the real issues in officially existing frameworks. A portable omnipresence administrations is a critical component of distributed computing situations, for the reason it keeps an up - to-date rundown of vicinity data of versatile client. On the off chance that vicinity overhauls happen frequently the quantity of messages circulated by vicinity server might prompt versatility issue and amigo list seek issue in vast scale portable vicinity administrations. To beat the adaptability issue proposed an effective and ascendable server structural engineering called vicinity cloud. It sorts out the vicinity server into majority based server-server construction modeling for effective looking. At the point when a versatile client joins a system or web, vicinity cloud seeks the vicinity data. It additionally accomplishes little steady pursuit inertness by the coordinated hunt calculation and one-bounce storing technique.

IV. Methodology

Aim of proposed system is to design an architecture of disseminate server for coherence request to the system for buddy list search. In this project work a scalable server architecture which provides services to ‘n’ number of users is presented. And presenting a precise design by improving the thought of peer to peer system while designing presence cloud. There are 3 elements in presence cloud which run across presence servers such as presence cloud server overlay, one hop caching approach, and directed buddy search .

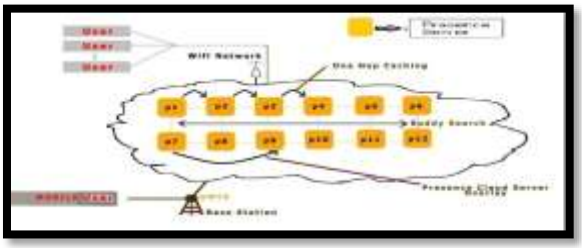


Fig 3.Overview of Presence Cloud

Construction modeling of vicinity cloud which is the proposed work is appeared in Figure1, Using 3G or Wi-Fi administrations versatile client get to the web and make an information connection to the vicinity cloud. Utilizing secure hash calculation versatile clients are purpose to one of the vicinity servers. To exchange vicinity data subtle elements, the portable client is validated to the versatile vicinity administrations furthermore opens a TCP join. When way is set up, the versatile client demand for the companion rundown to the vicinity server which is available in vicinity cloud. Lastly the solicitation is reacted by the vicinity cloud in the wake of finishing a productive hunt of mate's vicinity data. Target of this paper is to propose an on interest QoS directing calculation. Subsequent to the prerequisites for different applications might shift time to time, the methodology for QoS directing may not be proactive. The proposed approach has two stages specifically course revelation stage and course support stage. At the point when a source hub needs to pass information to a destination hub with QoS prerequisites it begins with the course disclosure stage. Once the course is found, the information exchange will occur. While information transmission is going on, it is likewise required to keep up the way to the destination. This is all that much alluring and required in portable specially appointed systems and thus is done in the course upkeep stage.

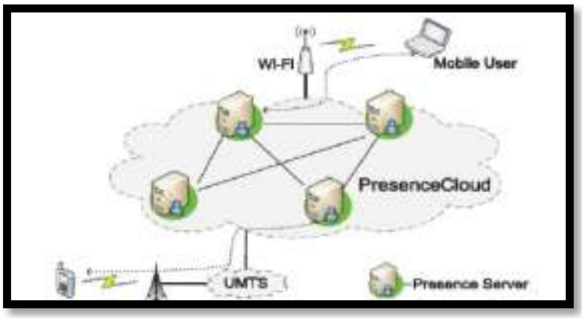


Fig 4.Architecutre of Presence Cloud

1) Presence cloud server overlay

The Presence Cloud server overlay construction algorithm organizes the PS nodes into a server-to-server overlay, which provides a good low-diameter overlay property. The low-diameter property ensures that a PS node only needs two hops to reach any other PS nodes.

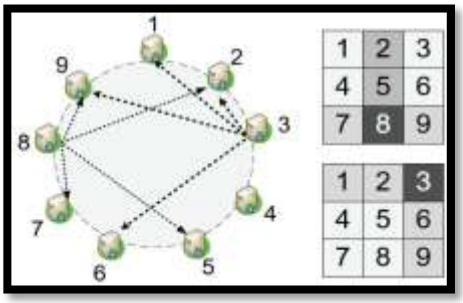


Fig 5.Presence Cloud Server Overlay

Presence server nodes are ordered in the form of server to server overlay in presence cloud server overlay and also endow low diameter overlay. Needs two hops to reach from one presence server node to other presence server node is the possession of low diameter and Presence cloud is based on grid quorum system. Size of presence server node is O √m, where m is the number of presence server in mobile presence services. By using grid quorum system presence server list is built and this presence server list maintains presence server node which has a set of presence server nodes.

2) One hop caching

To copy the vicinity data points of interest vicinity cloud requires reserving technique keeping in mind the end goal to upgrade the effectiveness of hunt operation. In vicinity cloud for the connected clients, vicinity data subtle elements of client rundown are kept up by vicinity server hub. Copying client list by vicinity server hubs are at most one jump far from itself. At the point when association is demonstrated by neighbor's store is overhauled furthermore upgraded occasionally with their neighbors. On the off chance that inquiry acknowledged by vicinity server hub it is not just react with matches from store where client list accessible by its neighbors. Vicinity data changes for portable clients when client leaves vicinity cloud or because of disappointment. Reaction from vicinity server hub telecasts its new vicinity to other neighboring vicinity server hub for upgrades. Vicinity data stays consistent and forward all through the session time of client is guaranteed by one bounce storing procedure. To enhance the productivity of the pursuit operation, Presence Cloud requires a storing technique to repeat vicinity data of clients. To adjust to changes in the vicinity of clients, the reserving methodology ought to be offbeat and not require costly systems for dispersed understanding. In Presence Cloud, every PS hub keeps up a client rundown of vicinity data of the connected clients, and it is in charge of storing the client rundown of every hub in its PS list, at the end of the day, PS hubs just imitate the client list at most one bounce far from itself. The store is upgraded when neighbors set up associations with it, and intermittently redesigned with its neighbors. Along these lines, when a PS hub gets an inquiry, it can respond not only with matches from its own *user list*, but also provide matches from its caches that are the user lists offered by all of its neighbors.

3) Directed buddy search

Figure 6 shows, for mobile presence services it is important to reduce search time. Using two hop overlay and one hop caching strategy presence cloud endow response for large number of mobile users. One hop search used for queries in order to reduce network traffic one hop caching maintains user list of its neighbors to enhance response time by increasing in finding buddies.

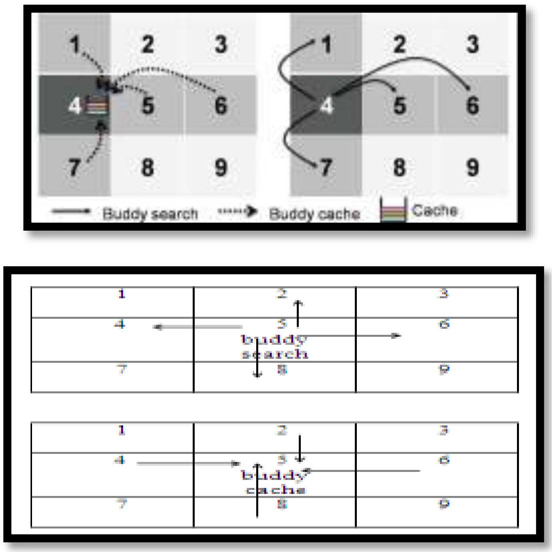


Fig 6. An example of buddy list searching operations in Presence Cloud

We battle that minimizing looking reaction time is essential to portable vicinity administrations. Consequently, the amigo list looking calculation of Presence Cloud combined with the two-jump overlay and one-bounce storing methodology guarantees that Presence Cloud can ordinarily give quick reactions to an expansive number of portable clients. In the first place, by arranging PS hubs in a server-to-server overlay system, we can in this way utilize one-bounce scan precisely for inquiries and in this manner lessen the system movement without critical effect on the list items. Second, by promoting the one-bounce storing that keeps up the client arrangements of its neighbors, we enhance reaction time by expanding the odds of discovering mates. Obviously, this component both diminishes the system activity and reaction time. In light of the system, the number of inhabitants in portable clients can be recovered by a television operation in any PS hub in the versatile vicinity administration. Additionally, the television message can be piggybacked in a pal hunt message down sparing the expense.

V. Algorithm

Presence cloud maintenance algorithm

```
./* periodically verify PS node n's pslist */
 Definition:
 pslist: set of the current PS list of this PS node, n
 pslist[].connection: the current PS node in pslist
 node.id: identifier of PS node node

 Algorithm:
 r □ Sizeof(pslist)
 for i = 1 to r do
 node □ pslist[i].connection
 if node.id ≠pslist[i].id then
pslist[].id: identifier of the correct connection in pslist

/* ask node to refresh n's PS list entries */
findnode□ Find_CorrectPSNode(node)
if findnode=nil then
pslist[i].connection□ RandomNode(node)
else
pslist[i].connection□ findnode
end if
else
/* send a heartbeat message */
bfailed□ SendHeartbeatmsg(node)
if bfailed= true then
pslist[i].connection□ RandomNode(node)
end if
end if
end for
```

This algorithm is fault tolerance design. At each PS node, a simple Stabilization () process periodically contacts existing PS nodes to maintain the PS list. The Stabilization () process is elaborately presented in the Algorithm. When a PS node joins, it obtains its PS list by contacting a root. However, if a PS node n detects failed PS nodes in its PS list, it needs to establish new connections with existing PS nodes. In our algorithm, n should pick a random PS node that is in the same column or row as the failed PS node.

Directed buddy search algorithm

1. A versatile client logins PresenceCloud and chooses the related PS hub, q.

2. The client sends a Buddy List Search Message, B to the PS hub q.

3. At the point when the PS hub q gets a B, then recovers every bi from B and hunts its client rundown and one-bounce reserve to react to the coming inquiry. What's more, expels the reacted amigos from B.

4. In the event that B = nil, the amigo list seek operation is finished.

5. Something else, if B =nil, the PS hub q ought to hash each remaining identifier in B to get a matrix ID, individually.

6. At that point, the PS hub q totals these b(g) to wind up another B(j), for every g Sj. Here, PS hub j is the crossing point hub of Sq convergence Sg. Also, sends the new B(j) to PS hub j.

VI. Applications

Server overlay and a coordinated pal seek calculation are utilized to accomplish little consistent pursuit idleness and utilizes a dynamic reserving methodology that generously decreases the quantity of messages produced by every quest for a rundown of buddies.It investigate the execution multifaceted nature of Presence Cloud and two different architectures. We additionally analyze the execution of the two methodologies in wording servers on the Internet. The outline of Presence Cloud, a versatile server-to-server structural engineering that can be utilized as a building hinder for portable vicinity administrations. The method of reasoning behind the configuration of Presence Cloud is to appropriate the data of a large number of clients among a great many vicinity servers on the Internet. To keep away from single purpose of disappointment, no single vicinity server should keep up administration wide worldwide data about all clients. Vicinity Cloud composes vicinity servers into a majority based server-to-server structural engineering to encourage productive pal list seeking.

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