

Improved Security in Mobile Converged Networks Based on D2d Offloading and Mobile Proxy Handoff Mechanism

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Abstract

Here We uses the Smart Phones With WI FI that forms the mobile converged network This conversed network has more number of nodes and LBS Server. We have to create node and form network. then update the members of LBS data. LBS are the services offered through mobile phone and take into account. the devices uses the geographical locations.it will provide the informations about the nodes and it holds the control over the all nodes. .in this mechanism to reduce cellular traffic. The mobile proxy is selected based on the higher power and bandwidth. if both is reduced for the mobile proxy then another node wii become a mobile proxy.the previous mobile proxy turn on to the normal node.no security between the each node due to the data transmission. during the data transmission packet loss is occur.to overcome this we uses the FEC machanism .in our paper we have to reduce the power consumption and provide the security.

Keywords: Offloading, Mobile converged network, mobile proxy, Petos, LBS, FEC, User authentication, Multicast

I. INTRODUCTION

Mobile Computing is a wireless network which is used to communicate between nodes.Modern people access the Internet using their smart phones instead of traditional computers, e.g., desktop computers or notebooks. Brand-new and easily-portable smart phones not only support high computing power for multimedia contents, but also embed various sensors and several wireless interfaces for newly add-on services. For example, location-based service (LBS) is services offered through thr mobile phone and take into account the devices geographical location.LBS typically provide information or entertainment. Applications LBS: Marketing, emergency, information Services ,navigation..In the geographical information system (GIS) is a System designed to capture, store, manage, analyses and present all type of geographical data.GIS is field, the customized contents are called Points Of Interests (POIs),which could be a heritage, a landmark, a scenic spot, a neighbouring restaurant, a store, etc. A GIS enables you to envision the geographic aspects of a body of data. Two main LBS issues that need to be tackled using smart phones are (1) battery power and (2) network bandwidth. For the first issue, past works have revealed that the challenge of LBS applications using smart phones is the limited battery power [1]. Keeping positioning and downloading of LBS's content induces high power consumption of smart phone. For the second issue, each wireless access technology is able to provide limited network bandwidth. Even if 4G/LTE provides much wider network bandwidth than 3G/3.5G, adding new spectrum licenses and upgrading network capacity may not suffice the rapid growth of mobile data traffic. Some works have shown that how to reduce traffic overload becomes an emerging and necessary research issue [2]. This paper considers the group LBS scenario, in which a group of users travel outdoors together.

A. Mobile Traffic Offloading Mechanisms

Offload mechanism is used to share the information between the source and destinations.even the power is low yhe source is changed. In this we uses the WIFI based offloading mechanism. the mobile traffic offloading mechanism can be divided into (1) infrastructure based traffic offloading and (2) ad-hoc based traffic offloading.Here we share the information using WIFI.In this offloading technique to reduce the power consumption and also uses the handover mechanism.all the nodes are connected in WIFI converged network using multicast .multicast has the single server and the multiple receiver.in existing system the

offloading technique is used in a limited network and it has lesser service time. to extend this service we proposed the offload and handover technique .

B. Group LBS Scenarios

Location-based service (LBS) are the services offered through mobile phone and take into account the devices geographical locations. LBS typically provide informations, other nodes locations. LBS Applications: cMarketing, emergency informton services, social media. according to the LBS definions only those navigations products that are receiving the information. Building low power location based services that can run for horse on mobile phone is challenging. this servey of power conservation methods profiles how different phones features and type of LBS consume power and discuss related design considerations. LBS has the information about the all nodes which are present in the converged network. It select the mobile proxy based on the power and bandwidth. LBS is connected to the mobile proxy uses the poi's (POINT OF INTEREST). it acts as a server. To reduce a power consumption and great bandwidth saving based on the relation between the nodes. To communicate between the nodes we use XMPP (Extensible Messaging and presence). Here we uses the GPS system. It has the customized content is called Point of interest. In our proposed system LBS shaes the user id and information about nodes to the new mobile proxy based on the power and bandwidth.

C. Mobile Proxy Handoff

Mobile proxy is act as another server in the converged network. Mobile proxy is selected based on the higher power and bandwidth.

D. User Authentication

This authentication process can be integrated into environments like residences where, in most cases, users are "trusted" people within a family. A control point first sends an Authentication control message to the Server device. A user digital profile (issued by a trusted certification authority) and a boolean value are attached as input parameters of such request. The former allows server to identify the current user and the second parameter, if true, allows server sending an event message to the network announcing a new user on the environment. This event allows each device to act proactively based on user information. Once receiving the request, server sends back an authentication user id based on the UUID algorithm, which indicates that the authentication process occurred successfully. Each user has a unique UUID that identifies him/her in the UPnP network. Each user authentication session returns a different UUID. It is important to point out how UPnP appliances will identify a user that accesses their UPnP services.

II. SYSTEM ARCHITECTURE

This architecture includes

1. LBS-Location based System Server 2. Mobile proxy 3. Mobile nodes. In the LBS holds the user id, Location and information about the nodes .It control all nodes using multicast over WIFI network under the mobile converged network.

Mobile proxy is connected to the LBS server used to POI (point of interest). Point of interest is called the customized content in the geographical information system. The mobile proxy is selected based on the higher power and bandwidth .according to the power and bandwidth the networks are provided, the network means WIF (hotspot mode). Mobile proxy is shares the data over the converged network. Due to the sharing of data bandwidth and power become low. so it sends request to the LBS server. then the server tells which node will have the next highest bandwidth. then that node will become the mobile proxy. previous mobile proxy will becomes the normal node, converged network is reformed. security provided between nodes. Packet loss is occur due to the data transmission. To overcome this situation FEC (forward Error Correction Mechanism) is used. if the new node enter into te network using point of interest.

A. Dynamic Group Management

WIFI based ad-hoc mobile converged networks.

- 1) Group association
- 2) Location update

B. Group association

The group association phase defines how a user is able to associate with the mobile proxy and join the ad-hoc mobile network. for examples in these new nodes is entered into the network and associated in that network.

C. Location update

The location update phase defines how the mobile proxy represent all members to update geo-locations for neighboring POI (point of interest) down loading. And provides this location update information to LBS server. Point of Interest gives the exact location of nodes.

D. Forward Error Correction

The data encode a message that is composed of k segments into n segments with redundancy. the receive k of n segments ,it can decode and recover the original message.FEC is a method of obtaining error control in data transmission in which the source and FEC is a digital signal processing technique used to enhance data reliability.this mechanism are well-known and commonly used error recovery mechanisms.

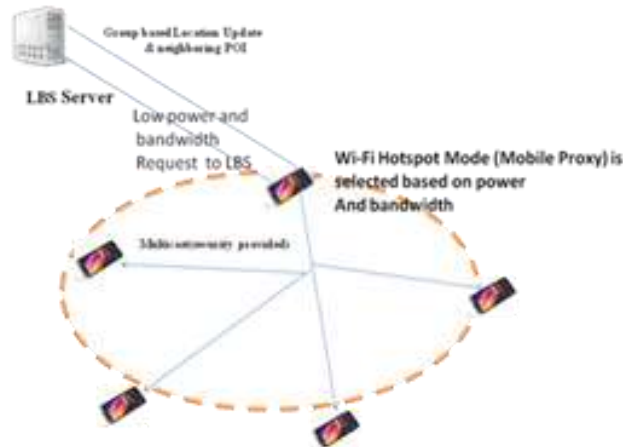


Fig. 1: system architecture

FEC is a method for obtaining error in data transmission in which the data is travelled between the source and destinations.it ia s digital signal processing technique used to enhance the data reliability.it ia s common error recovery mechanism and well known.in this paper we extend the service and reduce the power consumption.

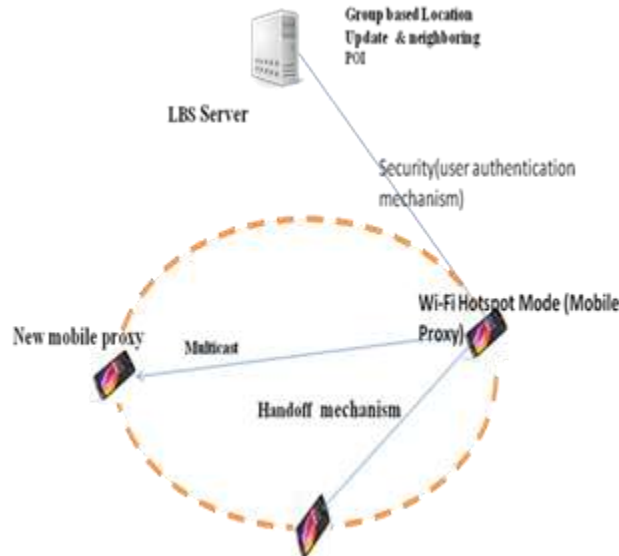


Fig. 2: handover mechanism process

In the handoff mechanism process includes Location Based Service Server, Mobile proxy and New node.if the power is low means the mobile proxy will select the other nodes have a higher power and bandwidth.if it find the any node have a power and bandwidth that node comes become a mobile proxy.the connection using multicast over the WIFI network.this process ks not end under the converged network.in the cellular network we reduce the traffic.overcome the cellular traffic MSN(mobile social network).the MSN server associate the nodes in the converged network. This process saves the power and reduces the traffic. if the new node enter into the network using point of interest and sends the request to the LBS server for group association.the point of interest holds the exact location of the node.if no one will have the highest power and bandwidth then the will become end or the multicast is end.the newest node enter into the network it must have the certificate of authentication getting from LBS server then only it allows the node into the network otherwise not.

E. Flow chart

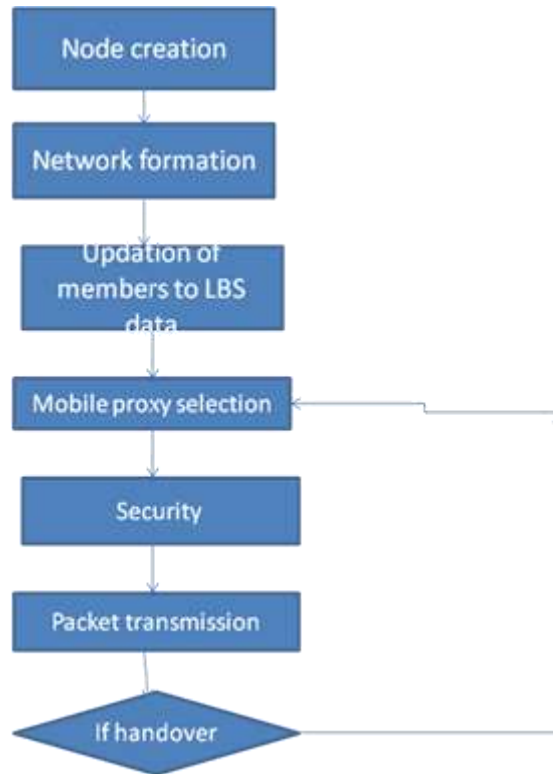


Fig. 3:

Initially we are creating two or more number of nodes and also connect network formation in every nodes are connect nearest node each nodes has the own cache memory utilization .In location based system have all details about individual of the nodes.That LBS check for which node have high bandwidth and high power select for one node dynamically .That select node are working to mobile proxy . It must have high bandwidth and high power also provide security based user authentication mechanisms it use security mechanism for the safe transmission.Each node has a unique UUID (universely unique identifier) in the UpnP mechanisms .Each user authentication session returns a different UUID.It is important to point out how UpnP appliances will identify a user that accesses their Upnp services.Data is transfer between each nodes during the transmission which node bandwidth and power decrease that nodereceiving request ,server sends back an authentication user id based on the UUID algorithm,which indicates that the authentication process occurred successfully.next LBS are check which nodes have high power and bandwidth and then change to new mobile proxy if no one have the power and bandwidth exit muticast.

III. CONCLUSION

To overcome the packet loss situation we introduce the Forward Error Correction mechanism. The security is provided based on the user id and authentication to transmit the data in a secure manner using the UUID mechanism(universally unique identifier).in our future work to improved and enhanced from the two things i.e.,(1)precise positioning (2)k-hop mobile converged network.when the WIFI technology or others allow smart phones to organize a melike wireless network.

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